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*Presented by the Author  
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MEMOIR  
ON THE TREATMENT OF THE  
EPIDEMIC CHOLERA

READ BEFORE THE  
MEMBERS OF THE FRENCH ACADEMY OF SCIENCES;  
WITH THEIR REPORT THEREON.

---

BY JOSEPH AYRE, M.D.,  
MEMBER OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON AND EDINBURGH,  
AND MANY YEARS PHYSICIAN TO THE GENERAL HOSPITAL AT HULL.

---

Vix Mihi Creditis sed credite; Troja maneret  
Preceptis Priami si foret usa senis.

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[1859]

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DEDICATION  
TO MY MUCH ESTEEMED FRIEND  
JONATHAN MORLEY, Esq.,  
OF BLACKBURN, LANCASHIRE,  
AND TO MY OTHER PROFESSIONAL BRETHREN OF GREAT BRITAIN AND  
AMERICA, WHOSE LETTERS AND REPORTS ARE COMPRISED  
IN THE FOLLOWING PAGES.

---

*My dear Mr. Morley and Gentlemen,*

*The very zealous and efficient assistance which your published letters and reports have supplied for the enlightenment of the public mind on the value of calomel as a remedy in the treatment of the algide or collapse stage of epidemic cholera, has been to me the source of the utmost satisfaction, for without the aid of your testimony in its favor, the extent of its employment would have been greatly more limited. To none, therefore, more appropriately than to yourselves can I dedicate these pages; and in doing so, can only add, that having been engaged for more than a quarter of a century on the subject, and having now entered on the seventy-eighth year of my age, I must hope that this publication will close my labours upon it, and that to you I may confidently bequeath its future advocacy, and in the meanwhile I beg to subscribe myself,*

*My dear Mr. Morley and Gentlemen,*

*With every sentiment of esteem,*

*Yours very truly obliged,*

JOSEPH AYRE.

HULL, JUNE 15th, 1859.

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## PREFATORY INTRODUCTION.

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In the year eighteen hundred and fifty six the following memoir with its accompanying correspondence was laid by me before the Academy of Sciences of France, in answer to a circular issued in 1854, by that learned body, in which it was announced that a gentleman of that country, Monsieur Bréant, had bequeathed the sum of one hundred thousand francs, to be given as a prize, to him who should discover the causes, and thereby be enabled to obviate the occurrence of the Asiatic Cholera; or failing to attain this object to him who should discover a remedy for the disease when developed, to its algide or collapse stage, and which by saving an immense proportion of the cases, should manifest a specific remedial power equivalent to that which is exerted by quinine in the cure of intermittents. The invitation to compete for the prize was made to the whole civilized world, and a commission of five members was appointed for receiving the memoirs, and for deciding upon the claims of the candidates. After the lapse of four years, the report of the commissioners was given in, and printed at the early part of last year. From this report, of which an extract *in extenso* is given below, we learn that among the number of memoirs sent in, amounting to one hundred and fifty three, "two only, of these authors," to cite the words of the report, "appear to have well understood the true aim of the *concours*, in applying themselves to pointing out the specific means for curing cholera." One of these memoirs is the work of a Russian physician, and the other is the result of my experience, and is comprised in the following pages:—The report on these memoirs will be found in full below. That on the first of these after pointing out various objections to the views and practice of its author, concludes with the declaration that it has no just claim to consideration.

On the memoir sent in by me, the report commences with the remarks, that the proto-chloride of mercury or calomel is much in use

with the medical profession in England, and then proceeds, to cite its words, "Dr. Ayre has employed the calomel in cholera according to a method not known to us before. This physician has administered the calomel in the collapse or algide period of cholera in successive doses, and in spite of the tendency of the stomach to reject every thing introduced into it, he assures us that he almost always succeeds in making the stomach retain the medicine in the dose of one or two grains (5 or 10 centigrammes), every five or ten minutes. The author insists strongly, and with reason, on this tolerance of the medicine by the stomach, which is the sign of the arrest of the fatal march of the malady. In this manner has been administered in a short space of time the enormous quantity of one thousand grains or fifty grammes of calomel without producing salivation, a remarkable fact, which the author attributes to the suspension of the action of the absorbent vessels pending the duration of the stage of collapse or algide period of the Asiatic cholera. Without considering what causes the morbid alterations which the internal surfaces of the digestive organs present, he regards them nevertheless as the initial symptoms of the affection, and that it is to modifications of the calomel acting on the surfaces that he imputes the specific efficacy of the medicine, an efficacy which results as the author affirms, in the cure of the sick in the proportion of eighty out of every hundred affected, an immense result if justified by an assemblage of facts adequately numerous. But though the author unites to his experience the testimony of many other physicians, who have adopted his treatment with a success equal to that which he obtained, nevertheless much more is required for the assemblage of results to carry conviction into the mind of the members of the section of medicine and surgery.\*"

Such is the judgment pronounced by the French Academy on my

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\* "Depuis le 20 novembre 1854, époque du dernier Rapport sur ce concours, jusques au 1er mai 1851, l'Académie a reçu et renvoyé à la Section cent cinquante-trois Mémoires ou communications.

"Parmi ces nombreux travaux, un grand nombre ne renferment que des suppositions plus ou moins invraisemblables; suppositions



memoir, and were no interest but mine affected by it, I should have deemed it fitting in me to yield to it my passive acquiescence. But the question at issue is of a public kind, and involves the enquiry whether there be an efficient remedy for the collapse stage of cholera, and whether calomel rightly administered be that remedy. The Academy acknowledges that it was wholly unknown in France, and as far as the late central Board of Health had

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accompagnées, tantôt d'observations insignifiantes, et tantôt exigeant des expériences presque impossibles que les auteurs demandent que la Section fasse elle-même, afin de justifier leurs prétentions.

“ D'autres ouvrages, beaucoup plus recommandables, embrassent l'histoire du choléra, s'étendent sur son étiologie, sur la fixité de ses symptômes, sur la constance des altérations morbides qu'il laisse après lui, soit sur les voies digestives et aériennes, soit sur la composition du sang et des autres fluides de l'organisme. Mais ces travaux n'ajoutant rien à ce qui est déjà connu, et surtout ne contenant aucun résultat propre à éclairer la thérapeutique des maladies épidémiques, n'ont pu être pris en considération par la Section.

“ Un troisième ordre de Mémoires est relatif à la statistique du choléra, soit d'une localité très-limitée, soit d'un arrondissement, ou même d'un département. Mais ces documents, intéressants peut-être pour les contrées où ils ont été recueillis, n'ont aucun rapport avec les questions que ce concours est appelé à résoudre.

“ Dans le nombre de Mémoires envoyés à la Section, deux seulement montrent que leurs auteurs ont bien compris le véritable but de ce concours, en s'attachant à indiquer des moyens spécifiques pour la guérison du choléra.

„ Le premier de ces deux Mémoires est intitulé; *Sur le traitement du cholera asiatique, des fièvres typhoïdes et de quelques autres maladies aiguës par l'inoculation de la matière variolique*. Il n'a que sept pages in-4°; mais il n'est que le résumé d'un long travail que l'auteur, médecin en chef de l'hôpital de Smolensk, dit avoir communiqué officiellement aux autorités médicales de la Russie qui, selon lui encore, en auraient recommandé les résultats aux médecins de l'empire russe.

“ Sans juger ce qui en est sous ce rapport, la Section aurait bien

knowledge of it, it was so far practically unknown in this country.† Irrespective therefore, of other considerations there is a sufficient plea for publication in the fact that the utmost want of information prevails with the highest authorities on the subject.

The Academy in its report declares that a larger assemblage of results is needed to enforce conviction. The truthfulness of the statements given of the results is not disputed, but only a greater

désiré connaître les détails des nombreuses expériences auxquelles l'auteur dit s'être livré, afin de pouvoir apprécier les conditions dans lesquelles se trouvaient les malades au moment de l'inoculation de la matière variolique, et d'en juger les effets soit sur ceux affectés du choléra, soit sur ceux atteints de la fièvre typhoïde ou du typhus.

“L'auteur est parti de l'idée que le virus du choléra et de la fièvre typhoïde est identique au virus variolique, de sorte qu'en inoculant ce dernier dans le plus haut degré de force du choléra, du typhus ou de la fièvre typhoïde, il détruit sur place le virus qui produit ces dernières maladies, et il le détruit ou plutôt il l'anéantit sans produire ni la fièvre varioleuse ni même les pustules varioliques. Les guérisons du choléra, qu'il annonce, sont dans la proportion de six sur sept malades.

“La Section de Médecine et de Chirurgie ne doit pas dissimuler les doutes que lui a laissés l'annonce de semblables résultats, doutes accrus, en ce qui concerne le choléra, par ce fait que, pendant la période algide de cette affection, la surface de la peau a perdu sa faculté absorbante.

“Comment alors le virus variolique pénètre-t-il l'organisme? Comment ce virus est-il absorbé presque instantanément, lorsque nous savons qu'avant la découverte de la vaccine, alors qu'au lieu de vaccine, on inoculait la matière variolique, le temps d'incubation de la matière inoculée n'était pas moindre de quatre jours?

† *In the Instructional Minutes for the prevention and treatment of epidemic cholera issued in 1854, from the General Board of Health, it is affirmed that, “If the diarrhoeal stage should pass into developed cholera, little can be done by the utmost medical skill to avert a fatal termination.”*

number of them is required. The testimony in fact is not questioned, but only more of it is wanted. In bringing therefore, the subject under public consideration, I may invite attention to the fact, that the testimony adduced is supplied by upwards of fifty professional gentlemen of the highest respectability, of Great Britain and America, residing widely apart from, and alike unknown to me and to each other. They all gave the one remedy, in the same

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“ Dans l'état où ce travail lui est présenté, la Section n'a pas cru devoir le prendre en considération.

“ Il en est de même du Mémoire de M. Ayre sur le traitement du choléra par le calomel ou protochlorure de mercure.

“ Comme on le sait, la médecine anglaise fait un usage très-fréquent de ce médicament; elle l'emploie dans le typhus, dans la fièvre typhoïde et les affections fébriles en général; elle l'a employé également contre le choléra, mais jamais, à notre connaissance, d'après la méthode suivie par M. Ayre.

“ Ce médecin a administré, coup sur coup, le calomel dans la période algide du choléra, et malgré la tendance si active de l'estomac à rejeter tout ce que l'on y introduit, il assure avoir presque toujours obtenu la tolérance du médicament en l'administrant à la dose de 5 ou 10 centigrammes, de dix en dix ou de cinq en cinq minutes.†

“ L'auteur insiste beaucoup, et avec raison, sur cette tolérance du médicament, qui est toujours l'indice d'un arrêt dans la marche funeste de la maladie.

“ On a pu administrer ainsi, dans un court espace de temps, jusqu'à la dose énorme de 1000 grains ou 50 grammes de protochlorure de mercure, sans produire la salivation, effet remarquable que l'auteur attribue à la suspension de l'action des vaisseaux absorbants pendant la durée de la période algide du choléra asiatique.

“ Sans considérer comme cause les altérations morbides que présente la surface interne des voies digestives, il les envisage néanmoins comme le symptôme initial de cette affection, et c'est aux modifications que le protochlorure de mercure opère sur leur surface qu'il attribue l'efficacité spécifique de ce médicament, effica-

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† In the original *Comtes Rendus*, No. 22, 1858, the words *deux en deux* are printed for *dix en dix*, reporting me thus to have given 2 grains of calomel every 2 minutes instead of every 10 minutes.

dose, and in the same intervals of time for its repetition, complicated with no other material medicinal treatment; with all these there was the same uniformity of practice in continuing its exhibition, so long as the collapse endured. With respect to the results there was the same average of recoveries, namely, about eighty five per cent of every hundred patients advanced into the stage of collapse. From particular results, they all found that neither salivation nor any other inconvenience resulted from the use of the medicine, however large might be the quantity of the calomel taken while the collapse endured. With them all the patients were found to recover from a pulseless state within a few days from the date of the attack, and without the intervention of consecutive fever—a striking fact, and remarked upon as such by most. To multiply the testimony of such results, in order to make it sufficient to produce conviction of the value of the remedy, would seem to be little less than a work of supererogation. The commendation to be bestowed on the remedy by such testimony would be but an echo of what may be cited from the language employed in the subjoined letters:—

From one we should hear “that we have in calomel at command a safe and simple remedy, almost specific, which if generally adopted would disarm the disease of nearly all its fell terrors.” From another, “that the collapse of cholera, “if treated by calomel in small doses, is a very manageable, and by no means a fatal disease;”—from a third, “I have seen many cases which appeared perfectly hopeless undergo such improvement under this treatment as I should have thought impossible;”—from a fourth, “that the

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*cité telle que l'on peut, dit l'auteur, à l'aide de ce moyen, obtenir les guérisons dans une proportion de quatre-vingts sur cent malades, résultat immense s'il était justifié par un ensemble de faits assez nombreux.*

“Mais, quoique l'auteur joigne à sa propre expérience celle de plusieurs autres médecins qui ont adopté cette médication avec un succès égal à celui qu'il avait obtenu, il s'en faut de beaucoup, cependant, que l'ensemble de ces résultats ait porté la conviction dans l'esprit des Membres de la Section de Médecine et de Chirurgie.



calomel had proved a mine of almost unfailing success in Wisconsin, and in the neighbouring states;”—and from a fifth, of the pledge given for the “recovery of a patient under the calomel who had already been despaired of, and was believed to be dying;”—such, and such like is the testimony stated, and in substance restated in the following pages of the correspondence, and such will it be in every rightly conducted trial of the remedy, whenever the eastern pestilence, which God forbid, shall reappear in Europe. In the meanwhile, I commit this MEMOIR with the correspondence to the keeping of my professional brethren.

And as from a strong sense of duty the Author was impelled in 1832\* to begin the task of collecting and arranging, and of early publishing the facts relating to the treatment of cholera, so he now parts with it with the satisfaction, not to say the consolation of having fulfilled it, and of believing, that when the hand which now traces these lines is withering in the grave, there will be those to follow him, who shall realise all that he and others have reported of the treatment in its favor, and will acknowledge that in this his humble endeavour to be useful in his day and generation, he had not laboured in vain.

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\* *In such a state of matters (general alarm) we will venture to give our opinion on the treatment of cholera. Our position has forced upon us the consideration of all, or most of the different plans which have from time to time been proposed for the treatment of cholera, and we have no hesitation in saying, that of all which have hitherto fallen under our observation, none seem to have been attended with so large an amount of success as that of Dr. Ayre, of Hull. This treatment was employed by Dr. Ayre, with most satisfactory results, at the advent of the cholera in this country, in 1832, and copious details respecting it were published in vol. 2 of the “Lancet,” for 1848, and also at page 260 of our last volume (in the “Lancet” likewise of 1832). Since the present occurrence of cholera in this country, the same treatment had been put in force by Dr. Ayre, and, we learn with signal and like success; scarcely a case having been lost under such treatment, if applied in proper time, and if the patient had not been previously plied with too many other drugs.—Extract from the leading article of the “Lancet,” by the Editor, vol. 2, page 130, 1849.*



To  
M. M. Magendie, Serres, Andral, Velpeau,  
Cl. Barnard,  
Members of the Section of Medicine and Surgery  
of the French Academy of Sciences.

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GENTLEMEN,

I have now the honor to submit to your consideration and judgment the method I pursue in the treatment of Asiatic Cholera; and in doing so I must express the satisfaction I have felt at knowing the conditions annexed to the bequest of the late philanthropic testator Monsieur Bréant, namely, that the prize shall be accorded to him who shall have discovered, according to the terms of your programme, "a medicine of incontestable efficacy, which shall cure the Asiatic Cholera in an immense majority of cases, as certainly as Quinine for instance cures the Intermittent Fever."\* From the facts and observations now to be given, and from the testimony of numerous correspondents accompanying this discourse, it will be seen, that it is in accordance with these conditions of a specific, that I have employed the medicine presently to be stated, the success of which I have now the honor to report to you.

Before however, entering upon the subject of the treatment, I must premise, that the Asiatic Cholera is divided into three stages, namely, the premonitory diarrhoea, the stage of collapse, and lastly the consecutive fever, and that it is to the two first of these that my treatment applies, and chiefly to the second, or that of collapse, as shewn in the fully developed disease, and characterised by rice coloured fluid dejections from the stomach and bowels, a livid colour, and death-like coldness of the skin, the eyes and cheeks sunken, the voice husky, the secretion of the kidneys suspended, the tongue and breath cold, the pulse often imperceptible at the wrist, great thirst, severe cramps, and a general prostration and

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\* "Une médication incontestable qui guérisse le choléra asiatique, dans l'immense majorité des cas, d'une manière aussi sûre que le quinquina par exemple, guérit la fièvre intermittente."

torpor of the system. The symptoms which precede these I have just named are termed premonitory, and are chiefly those of diarrhœa and require treatment modified in kind and degree from that demanded for the fully developed disease, while the third stage which succeeds the second one is that of fever, and for which a totally different treatment is required; so that when a patient survives the collapse, and has not been relieved from it by a remedy, a feverish state ensues and symptoms of inflammation appear. The premonitory diarrhœa is, therefore, what it expresses, premonitory of an approaching collapse, while the consecutive fever is the result of a neglected or mistreated collapse, which is the true disease, and to which applies the curative treatment I am now about to describe. It is therefore to the treatment of the collapse that all my observations will be directed, and in reference to which I would here observe, that the treatment I employed so late as 1854, and in all the previous outbreaks, which I have witnessed of this disease, is the same identically which I pursued in 1831. It was indeed, the treatment I had resolved to employ in the first case which I should have consigned to my care, and on its occurrence in the town of Sunderland, I visited that place, and by the indulgence of the late Dr. Clanny a case was given me to treat; it was in full collapse, and with the pulse imperceptible at the wrist. This woman was convalescent in forty-eight hours, and, as Dr. Clanny assured me, was the only case which he had seen recover that had fully advanced into collapse. The disorder at Sunderland, where it first appeared in England, was at this time subsiding, and I saw no second case; and as it was just appearing at the neighbouring town of Newcastle, I went thither, although my engagements at home prevented me doing little more at my visit than report the treatment I pursued at Sunderland. In 1832, the disease appeared in Hull, and the first case occurred in a crowded quarter of the town. The patient was attended by the late Dr. Chalmers, and was treated strictly on the plan I had employed at Sunderland, and of which I had informed him. In a few hours after the commencement of the treatment he invited me to accompany him to visit the patient. I found him in the fully developed collapse, with all its most characteristic symptoms, and strictly pursuing the treatment directed for him. I visited him a second time, and found that every care had been given to him by his attendants, and at the end of the day his recovery was secured. On the third day he was able to walk out of doors. Some time after witnessing the success of the treatment in this second case, I was requested to visit a third one by Mr. Sharpe, of whom I shall hereafter have occasion to speak. This patient a young married woman, of intemperate habits, and residing in a dirty and crowded neighbourhood, was in a profound collapse. We visited her together twice, and left Mr. Cooper, assistant to Mr. Sharpe, to remain through the night by her side, and to give her the medicine. At our visit in the morning, we found that the medicine had been taken with great

regularity, and that a considerable abatement of the symptoms had taken place, and the pulse was again perceptible at the wrist after many hours of extinction. From this time the symptoms continued to yield, and on the third day she became fully convalescent, and was walking out a few days afterwards. From this time Mr. Sharpe and his assistant adopted this treatment whose success they had witnessed, and continued to pursue the same uninterruptedly, and to afford me, as far as their engagements permitted, the benefit of visiting with, and occasionally for me, the more than two hundred patients which came under my care during the five months in which the epidemic remained.

Such, then, is the history of the three first cases which I saw of the disease, and in which a perfect trial was given to my treatment. The remedy I have now to speak of, as forming that treatment, was the same in all. It was given alone, or so much so as not to compromise its effect, or to lead to any wrong judgment concerning it; this remedy thus exclusively given, and virtually relied on as the sole remedial agent, was the chloride of mercury, or calomel, given in very small doses and at very brief intervals, namely, one or two grains made up with bread crumbs into very minute pills, and given in a spoonful of water every five or ten minutes, and with no other limit to their exhibition than that prescribed by the duration of the collapse. I adopted this treatment from a notion that the Asiatic disease bore a relation to the Cholera of Europe, as ordinarily met with, and in which I found the calomel successful, and that a derangement in the functions of the Liver was primarily the morbid condition to be relieved; but whatever might be my views regarding the nature of the disease, or the indication for its cure, I early discovered the important fact, that however long the calomel might be continued, no absorption of the medicine took place so long as the collapse endured; and that it was perfectly safe to persevere with the calomel in small doses until the symptoms of collapse had substantially abated of their intensity, the frequency of their exhibition being lessened as the progress towards convalescence advanced. The three cases which I have cited, in which no consecutive fever ensued, and where in each case a large quantity of calomel was given, present but an example of what occurred in more than two hundred patients which came under my care during the first epidemic, in which I pursued precisely the same treatment in all its details, and with the same success, when no obvious error in conducting the treatment had intervened to prevent it. And here I must invite attention to two points of preeminent importance, the first being, that no sensible operation, or inconvenience of any kind are produced by the calomel when given in the small dose however long the exhibition of it is required; secondly, that when by this treatment the collapse is subdued, no consecutive fever occurs, but the patient becomes at once convalescent, and able to walk out in three or four days from the date of his attack, and after having



been apparently in a moribund state, livid, cold, and pulseless. As soon as further trials of the Calomel in other severe cases of collapse had proved its remedial power, I sent a communication to the *Lancet* Journal, and at the same time to the Central Cholera Board, with the request to the latter to send down a medical officer of the Board, to witness the practice and its results. Failing in this application, and subsequently in one to the municipal body of the town, and being earnestly desirous that my treatment should be known, and its success authenticated, I secured the friendly services of three medical gentlemen to join me in my visits, and take a note of the particular condition of each patient, with the whole course of the treatment, and give their testimony to its results.

Acting upon the notice which I gave in the *Lancet* Journal, of my treatment, and its success, many medical gentlemen adopted it, and reported its success, and as it will be seen in the correspondence, they were glad to note that in a large majority of their cases, as I announced to have happened in mine, under the treatment by calomel, no consecutive fever followed the collapse, and rarely any pyralism from the use of the medicine. Important, however, as was the result, and widely as the knowledge of it was circulated, but little effect was produced at first to induce my professional brethren to verify these truths by a trial of the treatment; for various theories concerning the nature of the disease were entertained, and such indications of cure were founded on them, as forbade in their opinion the employment of calomel. But the greatest neglect of the treatment was occasioned by those, who finding all other means fail to subdue the collapse, were induced to make a trial of the treatment; but who, in the belief that the calomel would be absorbed, and that to be remedial it must be so, gave it so timidly, and distrustfully, and consequently in a dose so small, and at such wide intervals, as to lead to a failure with certainty. Multiplied examples of the kind are dispersed through the pages of the *Lancet* Journal; and in many instances the practice is represented to have been mine.

At Tooting, where the disease committed such ravages at its first outbreak in England in 1849, the treatment employed was professedly adopted from me, yet only half a grain of calomel was given every half hour; and so late as 1854, there occur reports from two medical gentlemen, one having charge of a dispensary in London, and the other of a cholera hospital in Edinburgh, in which it is stated, that the treatment of Dr. Ayre was adopted; and while one of those under a false impression gave twenty grains every ten minutes for two hours, when the patient died, by the other only a twentieth part of the quantity or one grain, was given every hour. To the errors thus committed in regard to the dose, and the times of its repetition, may be added those which arose from a distrust of a favourable issue produced by the slow appearance of improvement in a given case, and therefore an abandonment of the

treatment in the course of its trial. The reports published of the treatment thus conducted led many to neglect the remedy, happily, however, for its credit, a considerable number of the profession, both of Great Britain and America at length gave me their confidence, and have faithfully fulfilled the conditions necessary to success, and have voluntarily come forward with details of their practice and of the success which attended it, having verified in their own experience what I so early and so confidently promised them, namely, the perfect security from ptyalism, whatever might be the quantity of the calomel given in the stage of collapse, and the passing of the patient into a state of convalescence on the disappearance of the collapse, and the restoration to health without the intervention of fever. Such are the important results of the calomel treatment, which so many with myself have verified when carefully carried out, and which to obviate all misconception on the subject, I may here repeat, and which is known and designated as my treatment. It consists during the stage of collapse in giving *one or two grains of calomel every five or ten minutes*, with one or two drops of laudanum with the first three or four doses of the drug, *and perseveringly continuing the same dose at the same intervals of time until the symptoms of collapse, become virtually subdued*. This plan I have uninterruptedly pursued from the first to the last patient I ever attended in this disease, amounting to a very large number. My reason for giving the calomel in a small dose was that large ones were rejected from the stomach, and I repeated the dose frequently because it *was* small, that the action of the calomel might be constantly maintained in a disease whose duration is to its fatal termination, to be counted by minutes. I gave the minute dose of the opiate to enable the stomach to retain it, not now believed by me to be needed. I abstained scrupulously from the use of any auxiliary treatment. This I did in my early cases that I might not compromise the conclusion to which I desired to arrive as to the remedial power of calomel, and I have uniformly avoided them since, because I found that calomel given in the small dose and frequently repeated was an effectual remedy. I have, besides, avoided stimulants, whether medicinal or alcoholic because I found them not to be necessary, and believed they would act injuriously, when, from the long duration of the collapse, and the delay in commencing the treatment, consecutive fever might be feared: and, lastly, I fixed no other limit to the quantity of calomel which I gave, than that which the duration of the collapse required; having become early convinced, that pending its continuance, no absorption of the calomel takes place into the system; that while it is so given no ptyalism or other inconvenience is induced, *and that no extremity to which a patient may be reduced, will justify our withholding or suspending the use of it*. It might be, and, indeed, it has been objected, that a medicine available in one case of collapse, might fail in another, but experience has shewn, that the difference severally is only in intensity, and the same pathological



condition exists in all, and therefore warranting the belief, which experience has abundantly confirmed, that the same treatment, which avails for one, should, *ceteris paribus* avail for all. The entire success which attended the three first cases, in which the calomel was employed, gave me the warrant for expecting the like success would follow the future trials of it. The simplicity of the treatment, as formed essentially of one medicine afforded security against error, in the judgment to be formed concerning the cause of relief. The absence of any sensible operation of the calomel beyond that of lessening the dejections, an early result from it, has given something of an empirical character to the treatment; and by some it has been denounced as such; but the fact that it cures, is with me the valid reason for its employment. Surrounded, however, as is the subject of its pathology in mystery, I have not been unobservant of the facts which long observation has presented to me, and which has led me to conjecture as to the mode in which the calomel may act in subduing the disease.

*The non absorption of the calomel into the circulation* must cause its action to be limited to the lining membrane of the bowels and stomach, and it is in the bowels that the disorder begins, and where it appears to have its seat. In all cases of collapse where calomel in small doses is given, and only under that medicine, the first discharges from the bowels, when convalescence takes place are changed to a dark, and sometimes perfectly black colour, resembling the black wash of pharmaceutical surgery, as produced by the admixture of calomel with lime water. The calomel when exhibited in the collapse of the cholera would appear to be reduced to the state of an oxyde when meeting with an alkali in the bowels; and with a view of ascertaining the effect upon the disease by giving lime water with the calomel, a trial has been made of it in two cases of mild collapse, and in several cases of Choleraic diarrhoea, and with the most satisfactory results. Exhibited with this addition, the action of the calomel appears to be exerted earlier on the disease, and more speedily to bring on convalescence. Further experience, however, must be afforded by continued trials before any definite conclusion can be arrived at. Be this however as it may, there remains the fact that calomel in small doses, without any other adjunct is adequate to cure, and however humiliating it may be to our philosophy to confess that nothing more is known of the operation of the calomel than that it cures, yet our knowledge concerning it is not less than that which we have of the action of quinine in the case of intermittant fever. Analogy indeed, justifies us in the conclusion, that as there is a specific for the cure of intermittants, and for some other diseases, so also may there be one for the collapse of Cholera, and however reluctant I have felt to put forward such a claim for calomel, and much less to contend for it, yet on more than one occasion, I have declared, and many others with me, that in the cure of the collapse, with no

sensible operation to render its action intelligible, it exhibits all the marks of a specific, and as such is entitled to be relied on.

And now, gentlemen, having brought under your notice the facts and observations relating to the remedial value of calomel, in the treatment of the collapse of Cholera, it remains for me, in the next place to authenticate by evidence the truth of what I have affirmed, relating to my own individual success in the treatment; and I must recall to your recollection, that in the earnest desire to have my treatment witnessed, and its success known and reported, and failing in my application to two public bodies, I engaged three of my professional brethren having the most leisure to visit and report of my patients. To the testimony accorded by these gentlemen, Dr. Henesy, and Messrs. Jenkins and Marston, whose testimony is annexed, is to be added that of Mr. Sharpe, all of whom saw my practice and have severally attested the success of it.\* Indeed this gentleman, who was so largely engaged with the disease in his private practice, and so strictly adhered to the conditions of the treatment, has reported his testimony in a letter, also subjoined, in which he especially dwells on the facility with which the treatment is conducted, and that striking and peculiar feature of it, in restoring the patient to convalescence without the intervention of fever.

Of the patients in the developed state of collapse whom I attended in 1832, and whom generally one or more of those gentlemen saw with me, I have now to speak. Their number, as it stood in the inspectors books was 219, but of these 13 were either already dead, or beyond the power of swallowing anything, before I could attend to the call to visit them. The number, therefore, whom I prescribed for was 206, and of these there were 175 who recovered, and 31 who died, or 85 recoveries in every 100 attacked. This number, large as it was, would have been greater, had not the fear at that time about infection made it difficult to procure nurses, and too many of whom neglected their duty. As illustrating the character of the cases, and the treatment of them, I have given the details of ten, (No. 1) having selected them of every age, from the patient of one year to the advanced age of 92. To these cases are added in a tabular form fifty others (No. 2) which were especially seen by one or more of the gentlemen named. Of these 50

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\* 1st. "We have witnessed the recovery of many patients from a state of extreme collapse, and even when they had been several hours in that state before the medical treatment began. 2nd. No cases which we have visited and prescribed for, or which we have seen with you, have fallen into collapse when treated in the premonitory stage. 3rd. From our united experience we feel the most unbounded confidence in the use of calomel, as the preventative of collapse, and that it is also the most effectual remedy when the stage has come on." In confirmation of the opinions here expressed, Mr. Sharpe adds, "Having seen a great deal of the cholera during its prevalence in 1832, and having attended a large number of patients, both with Dr. Ayre and alone, and having pursued the practice adopted by him, I feel no difficulty in asserting that my experience of the efficacy of the treatment is in entire accordance with the opinion above expressed by the Messrs. Jenkins, Henesy, and Marston."

patients, 11 were in a pulseless state when the treatment began ; the average quantity of the calomel taken was 128 grains in one or two grain doses ; the average duration of the collapse before entire convalescence was established was four days. The entire recovery of only four of these patients was delayed beyond the sixth day, and only one to the tenth. At the side of the table are the names of the gentlemen who saw these fifty patients with me.

Such then, gentlemen, are the facts, and the testimony to verify them, which I have now brought under your notice. They relate only to my own individual experience of the treatment, and my report of its results, and I have, therefore, now to bring before you independent and disinterested evidence on the same subject, communicated in letters to the *Lancet* Journal from medical gentlemen of Great Britain and America. Of these the first in order (No. 3) is one from a medical gentleman of Blackburn (Mr. Morley), in Lancashire, who informs us that in 1834 he had charge of a large dispensary at which he superintended the treatment of 33 cases of this disease, and of them only three were saved. "These three," to quote his own words, "I have no hesitation in saying were saved by Dr. Ayre's plan of treatment, which unfortunately I had not become earlier acquainted with." Subsequently Mr. Morley informs us that a fourth case came under his care ; and he describes it as characterised as an example of the severe form of the disease, with a pulse perfectly extinct. The same treatment was employed and the patient was able to leave the town at the end of a week.

In a second letter of a later date, this gentleman relates that he had been called into consultation on a case of great severity, where he had to encounter reluctance on the part of his colleague to the employment of the calomel treatment, and which he only fully overcame by a confident assurance, not unworthy of the occasion, that under its use he would guarantee the recovery of the patient. These gentlemen remained near the bed administering the medicine during the next five consecutive hours, and the recovery of the patient was the result (No. 4).

The next of these letters is from Dr. Kelso (No. 5) of White Oak Springs, Wisconsin, in the United States of America. From this gentleman we learn, to use his own words,—“That in twenty cases of average severity, occurring in his own practice, this drug (calomel) proved a mine of almost unfailing success, and that similar success followed the practice of many of his professional brethren, of Iowa, Illinois, and Wisconsin,” and he adds that he takes great pleasure in recording the fact, that more than three fourths of these states, and indeed, of the union have followed with very general success the system pursued by Dr. Ayre.”

The letter we next come to is also from America, and dated from Montreal by Dr. Gibb, (No. 6) who also relates, that before proceeding from England to that country, he had read with attention various papers by Dr. Ayre on the treatment of Cholera by calomel, and on the disease breaking out in Montreal, “out of ten cases, to



repeat his own words," which I had tried, the plan suggested by Dr. Ayre, has proved so far successful that I have not lost a single one. In the same letter Dr. Gibb gives an extract from the British American Medical Journal, in which Dr. Von Effland of Quebec, (No 7.) relates that out of fifty cases he had only lost five, and his treatment of all was the same as that employed by Dr. Ayre. Dr. Gibb alludes also to the success of Dr. Hall as given in that Journal, and gives an extract from Dr. Hall's paper, in which he states, that the calomel treatment had proved equally successful in the hands of other medical gentlemen of this city (Montreal), as it had done in his.

After this letter from Dr. Gibb, there follow two other letters from British America, one from Dr. Craigie of Hamilton, West Canada (No. 8), and the other from Dr. Jukes, of St. Catherine's (No. 9). By the former we are told, that from the difficulty of procuring suitable attendants to carry out the treatment fairly, he had lost three cases out of eleven, but expresses the most unbounded confidence in the treatment employed in the stage of collapse, while the latter, without giving any details of cases, informs us that he had very doubtful success with every treatment until he resorted to calomel, when his entire confidence was secured in its remedial power. Returning to England, we hear from Dr. Bullar (No. 10), of Southampton, the successful results of his treatment with calomel, and at the close of his letter, he declares that his observations relate to the malignant cholera of a very fatal type, all occurring in the same infected locality, and treated in the houses where they were attacked, in the state of decided and commencing collapse. They were such, to repeat his own words, "as I should have regarded as very hopeless until I tried Dr. Ayre's treatment, to which, I may add, I had an *a priori* repugnance, and only resorted to it, as the *anceps remedium melius quam nullum*."

The details of two cases of the usual severity are given by Dr. Pritchett, of Wandsworth-road, London (No 11), which were saved, remarking, as his opinion, "that in this treatment we have at command a safe and simple remedy almost specific, which if generally adopted, would deprive the disease of nearly all its fell terrors."

From the valuable communications of Mr. Jones, also of Wandsworth-road (No. 12), we learn that between the 6th of July, and the 8th of October, 1849, he had 985 cases under his care, and that of these 107 were in a state of intense collapse, in which there were 5 deaths,—687 cases of rice water purging, no deaths,—200 trifling diarrhoea,—no deaths. In the first two cases of intense collapse salines were given, both died. "I continued, he adds, to order calomel in all the succeeding cases, and with the results as stated." By Mr. Spong, of Faversham, Kent (No. 13), the details of a striking case are given, in which the treatment by calomel was successfully employed, and upon which he observes, "that to those who are as yet undetermined as to the treatment of this fatal

malady, I can confidently recommend it, and will boldly affirm, that when tried at the bar of experience, it will not be found wanting."

The particulars in detail are given by Dr. Pickop, of Blackburn (No. 14), of his treatment of a patient in a collapse of extreme severity, in which one hundred and forty grains of calomel were given in the usual small dose, with entire convalescence on the fifth day. In the other cases, he proceeds to observe, he gave single grain doses every five minutes, and in each case the symptoms were arrested "as if by a charm." On another occasion (No. 15), we learn that he had, to adopt his own words, "two other unmistakeable cases, which were treated as the others, and with the same success, one of them was so severe, that the patient was for some time speechless, pulseless, and gasping."

In a letter also to the *Lancet*, from Mr. Allen of London (No. 16), we learn, that on his appointment as district Cholera-surgeon, to the dispensary, Soho, he had 30 cases to treat; with the two first patients he employed sulphuric acid, they both died. That he then resorted to the small dose system of calomel in 28 cases. of these he lost 10, but of these ten, 6 were lost from causes obvious and unavoidable, and rendering success unattainable. He then adds, to give his own words, "I can say with truth, as the result of my own experience, that I consider cholera in its stage of collapse treated with two grain doses of calomel at short intervals, and vigorously carried out, a very manageable, and by no means a fatal disease."

By Dr. Payne of London (No. 17), is afforded a very striking example of the power of calomel in this disease, and at the same time the danger of a relapse by too early suspending its exhibition, or by giving it at wide intervals before the symptoms of the disease have fully abated, and of the facility with which the progress to recovery is resumed, on the resumption of the medicine. Dr. Payne then proceeds to add, that he had steadily pursued the treatment, and had lost but one patient through the whole epidemic, although he had very many cases under his care in all stages of the complaint.

The report we next come to is from two medical gentlemen, Knowles Wilson, and Wright, of Sheffield (No. 18); it is dated 1833, and sent to the *Lancet*. The number of their cases was 103, of which 54 were in the fully developed stage of collapse, 20 with collapse impending, and 21 with diarrhoea. The deaths were 23, but of these they enumerate various causes, apart from the treatment, which precluded 13 of the number from any chance of recovery. They close their remarks with repeating, "that the treatment of cholera by calomel will ultimately be the one most generally resorted to."

In a letter to the *Lancet* it is stated by Dr. Carter now of Brighton, and late of New Shoreham (No. 19), that he had been



called altogether to 58 cases of collapse, or which would have been such but for the calomel treatment. Of these he states, to quote his words, "I had lost three before I began with the calomel treatment, and have had only two deaths since I adopted it," adding "that he doubted whether any one could adduce more convincing proofs than himself of the wonderful effects of the calomel treatment."

During the years 1832, 1849, and 1853, Mr. Merry of Hemel Hempstead (No. 20), relates that he had a great many cases of the Asiatic cholera to treat, and had the opportunity of trying every plan suggested, and he states, to cite his own words, "from my own observation of facts, I feel satisfied that the only chance of success in the true Asiatic cholera is by the calomel treatment. By the exhibition of this drug in a small dose every ten minutes, I have had the satisfaction to see in many cases which appeared perfectly hopeless, such an improvement as I should have thought impossible."

Dr. Shearman of Rotherham (No. 21), gives the details of the only three cases in which he employed the calomel "They were all in extreme collapse, and they all recovered under the calomel treatment."

To the account here cited we may now give the one afforded by Dr. Taylor of Maghull, near Liverpool (No. 22), in which is related the extraordinary but not unprecedented fact that a woman had taken in two grain doses, eleven hundred and sixty grains of calomel, and a youth only sixteen years of age, nine hundred grains without any signs of salivation. Both these patients recovered perfectly. And here I would remark, that children under the calomel sometimes come round in a few hours, and where a long perseverance in the treatment is required, they bear the medicine, and even in as large a dose as adults. Out of 159 cases reported by that gentleman, there were 126 recoveries and 21 deaths, about 85 per cent. This includes all ages, and from the slight to the extreme collapse.

"I had made up my mind, writes Dr. Stanley, of Whitehaven (No. 23), in his letter to the *Lancet*, to give the mercurial plan a trial, I selected three cases in the hospital, admitted in the stage of collapse, with the pulse gone, and with the other characteristic symptoms. The same treatment was pursued with all. A grain and a half of calomel every fifteen minutes. The first patient was discharged well in four days, after having taken two hundred and nineteen grains of calomel without any signs of ptyalism, or any unpleasant symptoms produced; the other two patients were treated in the same way, and with the same results."

In a report sent in to the Board of Health in 1832, from the cholera hospital Nutford-place, under the care of Dr. Holroyd (No. 24), it is averred that the disease had yielded to the treatment recommended by Dr. Ayre, and it is further stated, that the house-

surgeon, nurse, and porter became successively attacked by the disease, and were all restored by the same treatment.

In a return made by the parish hospital of St. Pancras (No. 25), it is related that in seven cases the saline treatment was tried, but not in one did it produce recovery, calomel and opium however, afterwards restoring the patients in some instances. One of the patients took three hundred grains of calomel without any ptyalism.

The gentleman whose testimony I must next cite is that of Mr. Hay (No. 26), who was engaged in the treatment of the disease in all the several epidemics in Hull, and witnessed much of my practice in it. This gentleman informs us in two communications on the subject, that the calomel has been with him most successful, and that he has a record of many cases, in which perfect recovery took place from a pulseless state of collapse; and he hardly ever knew collapse to be followed by consecutive fever under the calomel treatment. In the brief outbreak of the disease in Hull in 1854, Mr. Hay relates, that he had the first two cases to treat, which he invited me to witness. Both were in deep collapse, and were both walking out, one on the fourth, and the other on the sixth day from the date of their first attack, one took ninety, and the other one hundred and forty grains. To this communication from Mr. Hay, I subjoin a letter from Mr. Sharpe (No. 27), with whom I attended so early, and so often in the year 1832, and whose experience in the use and success of the treatment was the same as my own, sharing with me fully in the confidence which he reposes in it.

By Dr. Wraith of Blackburn (No. 28), we are informed, that in 1849, he had first tried a treatment in which calomel was not employed, and it failed, when he had recourse to the calomel, and out of eight or nine cases of collapse seven were recovered. In 1854 he had only three cases, all of them were in extreme collapse, and one of them pulseless. They all recovered in a few days, and had no consecutive fever. To this gentleman's letter is appended a declaration signed by four medical gentlemen of Blackburn and its neighbourhood, in which it is affirmed, that they have no confidence in any plan of treatment which they have tried excepting in that of small doses of calomel, and that by this plan they had succeeded in curing the worst forms of cholera.

By Mr. Gathergood of St. John's, Norfolk (No. 29), we have presented in a tabular form the treatment pursued in 63 cases, and of which 24 were of premonitory diarrhoea, 21 of incipient collapse, and 18 of the fully developed disease. Of these 55 recovered, and 8 were fatal, though of the patients who died, one had been drunk for several days before his attack, and another was of dissipated habits. Both went into consecutive fever. The average quantity of calomel taken in collapse in two grain doses was about ninety grains.

Mr. Manby of East Rudham, also of Norfolk (No. 30), reports that in 1832, calomel was their sheet anchor. In the treatment of 109 patients in a more or less developed collapse, the deaths were 13. In the epidemic of 1849, the treatment and result, were about the same.

In a letter from Mr. Taylor of Leigh-street, London (No. 31), I am thanked for what he is pleased to call my teaching him in 1833, the treatment of cholera. In one recovered case he gave the calomel to the extent of seven hundred and thirty-four grains without inducing salivation.

By another gentleman Dr. Thomas of Sheffield (No. 32), we are told that the treatment by calomel had been very successful in the 22 cases which had come under his care. To one patient he gave two hundred and seventy-six grains of calomel, and to another three hundred and seventy-six grains in two grain doses, both these patients recovered.

From Mr. J. Taylor (No. 33), we learn, that such was his success in the treatment by calomel, that it occasioned some astonishment in the neighbourhood as he considered two of the patients whom he saved to have been in *articulo mortis* at the time of the first visit.

Dr. Serle (No. 34) late of the East India Company avers, that from the experience he has had in the treatment, if any single medicine is entitled to be regarded as a specific in the cure of a disease, that appellation is due to calomel. In a long communication from Dr. Niddrie (No. 35), we are informed of the various means he employed with the patients whom he first attended, and their entire failure, until he had recourse to the calomel treatment which he followed with the most exact attention to the conditions necessary to render it successful. By Dr. Oke (Nos. 36, 37), of Southampton, and Mr. Nankivel, while attesting their success with calomel, we are informed of the particular care they respectively employed to secure the due administration of the medicine. By the former gentleman a careful selection and supervision of the nurses were attended to, and by the latter the young medical assistants were enjoined themselves to administer the medicine.

And now, gentlemen, having engaged your attention so long in citing individually the evidence of various medical gentlemen, I must here content myself with referring you to the testimony as given in various communications comprised in the following pages. I might here cite the evidence from documents supplied to me by Drs. Sutherland, Maitland and Marshall, and Messrs. O'Shea, Norris, Cox, Hardcastle, Mundy and Glenton (Nos. 38 to 46 inclusive). From all these gentlemen the evidence for the calomel will be found to be in general accordance with that already given, and by some of them even yet more emphatically expressed. Leaving therefore these to be consulted, I shall now



adduce the proof of the high value of the calomel treatment when rightly employed, and the want of success when otherwise; and perhaps of all the testimony which has been afforded me upon the efficacy of calomel in this malady, when it is administered according to the required conditions, and of its inutility when they are neglected, there is none more striking than that which has been sent me, and taken from a report made from the Western Dispensary under the care of Dr. Mc Intyre (No. 47), who gave me permission to publish it. The treatment of the 12 cases was believed to be on the system of small doses of calomel, but he draws our attention to the fact that there were only 7 patients with whom this treatment was rightly pursued; and that these recovered, whilst to the 5 others the calomel was administered at such wide intervals, and in such small doses, and to so small an amount, that the remedy had not the power which was looked for from it, and these 5 died. None of the patients who were cured were attacked with consecutive fever, and one of them took two hundred and ten grains, whilst the greatest quantity taken by those who died was only forty-eight grains, whilst others took only thirty grains in eighteen hours. In the fatal cases various stimulants were employed, whilst the other patients were treated and cured by calomel alone, rightly administered.

I will now close the subject of testimony, and in conclusion, I beg to direct your attention to the report rendered by seventeen medical gentlemen (No. 48), on the treatment and its successful results, with the calomel, on 504 patients, who were more or less in the developed stage of collapse, there were 422 recoveries, and 85 deaths, or 84 recovered in every 100 attacked. Throughout all the observations made respectively by those gentlemen on the cases, there are exculpatory reasons given why some of them proved fatal, as if each instance of failure few as there were, were exceptional to the rule, which was one of success, and as if bound by an obligation to explain to themselves, not how they merely recovered so many, but why they had not recovered all.

And now, gentlemen, having trespassed so long upon your attention, I shall conclude with a brief summary recapitulation of the leading principles of the treatment by calomel, and the facts which I have cited in support of them.

We begin by repeating:—

1st. That the collapse of the Asiatic cholera is unique in its character, and uniform in its symptoms, the several cases of it differing from each other only in their degree of intensity; that the premonitory diarrhoea is usually, but not essentially preceding it; and that the consecutive fever is a result of the disease, and not the disease itself, and is obviated by the calomel when administered in the stage of collapse, and with attention to the conditions demanded for success.



2nd. That these conditions may be emphatically affirmed to consist in the giving of two grains of calomel every ten or every five minutes according to the urgency of the symptoms, and in not hazarding any diminution of the dose, or of the frequency of its repetition until the form of the disease has become materially subdued; and further, that excepting an allowance of cold water *ad libitum*, all auxiliary treatment must be withheld, and especially that of stimulants, as tending to compromise the action of the calomel, and to favour the occurrence of fever.

3rd. That during the progress of its developement, and pending the continuance of the stage of collapse, the power of the absorbents is suspended,—a truth unhappily too long discredited,—and thus the calomel produces no mercurial effect upon the system, but has its action probably wholly limited to the lining surface of the stomach and bowels.

4th. That the calomel when taken in a large dose becomes an irritant, and is either at once rejected from the stomach, or increases the fluid dejections from the bowels, but when given in a small dose it is readily retained, and its earliest effect is to lessen the number of fluid dejections, and gradually to bring the patient from a state apparently moribund, to one of entire convalescence, and without the intervention of fever.

5th. That the treatment by calomel avails for every age, and little difference is required in the dose, or in the times of its repetition, whether for infants or adults, since the calomel by not being absorbed inflicts no injury on the system, and is strictly local in its action, and therefore, the calomel is required to be, and may be safely continued so long as the symptoms of collapse remain.

6th. That under the calomel treatment, and under no other, the alvine dejections become changed from the rice colour to that of more or less blackness, and is the precursor or accompaniment of convalescence; and resembles so much the black wash as extemporaneously made by mixing calomel with lime water, as to suggest the conjecture that this blackness of the first discharges is attributable to the calomel being reduced to the oxyd state in its passage through the bowels, and that it thus becomes so remedial.

7th and lastly, that in the reports sent by various correspondents of Great Britain and America, there is a coincidence of agreement in their experience fully confirmatory of mine relating to the treatment and results, in all the material points. By them all are noticed more or less, particularly the large quantity of calomel sometimes required—the entire impunity attending its use—and the necessity of its being perseveringly taken, with the sudden transition from disease to convalescence without the intervention of fever; and that also, there is such a certainty of recovery from the calomel treatment when rightly conducted, that despite the causes which act so much among the poor to prevent it, there is an average

recovery of eighty four or eighty five in every hundred falling into collapse, and as the treatment consists in the use of one remedy, we are warranted to affirm that this remedy is in the fullest sense of the term a specific.

I have the honor to subscribe myself,

Gentlemen,

Your obedt. Servant,

JOSEPH AYRE,

HULL, JUNE 15th, 1856.

SECTION I.—REPORT OF PATIENTS TREATED BY THE AUTHOR DURING  
THE EPIDEMIC IN HULL, OF 1832, AND REFERRED TO  
IN THE FOREGOING MEMOIR.

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No 1.

The following ten cases afford examples of the disease in its stage of collapse as it occurred in my practice in 1832, and illustrate certain points of interest in the treatment. They have been purposely copied from my case book of patients varying from the earliest infancy to the period of greatly advanced age, in order to shew that no difference of age precludes recovery under this treatment, and that all can equally undergo it with impunity.

In cases Nos. 1 and 2 an excellent illustration is afforded of the value of time in the treatment of the disease, and what risk of fever and even of death is increased by any interruption in the regular course of the treatment, and how the danger is met by a return to the right course. In case No. 8, is shewn the necessity of perseveringly pursuing the treatment, however unpromising may be the prospect, for by thus persevering the patient perfectly recovered. The patient whose case is No. 10, survived eleven years, having reached the great age of 103, and in seeming good health until within a few months of her death.

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CASE I.—Mary Atlas, aged six months; October 19th. Is lying in a state of apparent torpor; purging and vomiting profusely a colourless liquid; skin cold and livid; no pulse at the wrist; the eyes sunk. The mother, it is said, died a week since of the disease. *To have a grain of calomel every seven minutes until relieved, with occasionally one drop of laudanum in water.*

20th. The medicine has been given very irregularly, and the skin is still cold and livid, and the purging and vomiting continue. The pulse is perceptible, but feeble. *To have the calomel regularly until relieved.*

21st. The surface is now warm, but the child is restless. *Two leeches to be applied to the body, and a cold lotion to the head, and some castor oil to be given.*

22nd. The sickness and other symptoms relieved; appears much better.

23rd. Is quite well—was visited by the hospital assistants.

CASE II.—John Anderson, aged eighteen months; June 2nd, 12 at noon. The child is lying by the side of its mother, who is ill of another complaint; is vomiting and purging copiously a colourless fluid; is quite cold and livid, and no pulse is perceptible; has great

thirst; has been sick during several hours, and lately became cold and livid. *To have a grain of calomel and half a drop of laudanum every ten minutes.*

3 P.M. Has had no medicines, as none of the relations or neighbours dare enter the room. Is frightfully cold and livid. To have a nurse from the hospital.

5 P.M. The child has taken the calomel regularly, and is less cold, and the sickness and purging abated.

6 P.M. Is worse; no medicine has been given during the last hour; has been sick once; the limbs are cold and blue and damp; a gratuity is promised to the nurse if the child is saved. *The calomel to be taken every ten minutes as before; and after four hours at wider intervals.*

3rd. 7 A.M. The child has taken eighteen doses of its medicine, and is in every respect greatly improved; has had no stool. *To have castor oil and its medicine every two hours.*

6 P.M. Is cross, and the skin is preternaturally warm; has had a stool. *Two leeches to the body; the calomel to be discontinued.*

4th. Is greatly improved, and has slept in the night.

5th and 6th. Continues to improve.

7th. Is quite well. No soreness of the gums.

CASE III. Hannah Mason, aged two years; October 11th. Is purging and vomiting a whey-like fluid; skin very cold and livid; eyes sunk; voice somewhat hoarse; thirst, &c.; has been affected some hours. *Half-a-grain of calomel every five minutes, with half-a-drop of laudanum, until the skin becomes warm.*

12th. Is quite relieved; purging and vomiting have ceased; skin natural; no thirst; to have castor oil; was seen by the hospital attendants; on the following day the child was well; no ptyalism.

CASE IV.—Ann Souter, aged seven years; May 3rd, 11 A.M. Is purging and vomiting the characteristic fluids; is of a death-like coldness; lips and hands livid; no pulse at the wrist; eyes much sunk; has cramps and much thirst; was seized this morning with the above symptoms; Mr. Sharpe and his assistant (Mr. Cooper) are present, and have been giving her a grain-and-a-half of calomel with one drop of laudanum every five minutes; nothing else has been given; waited an hour with Mr. Sharpe.

12 at noon. Has taken twelve doses of the medicine; pulse is now perceptible, and the surface is somewhat less cold and livid; had no sickness until near the end of the hour, when she threw up a large quantity of fluid with the characteristic violence; had also some cramps. *To take a grain of calomel every twenty minutes.*

2 P.M. Mr. Sharpe is present; the patient is asleep; skin of natural warmth; breathing calm, and pulse quite distinct. *To take the calomel every half-hour, and without the opiate.*

9 P.M. All the unfavourable symptoms gone; pulse 100; skin natural; no sickness; not much thirst; pulse quite distinct; has slept a good deal. *Calomel every two hours.*



4th, 7 A.M. Has had a good night; skin and pulse natural; has had a stool, which was very dark. *Calomel to be discontinued.*

5th. Has had a good night; wants to be dressed.

6th. Is quite well, and has been walking in the street; has no soreness of the gums.

CASE V.—John Skelton, aged eleven; October 16th. Seen by the hospital assistants. 9 A.M. Is purging and vomiting profusely a whey-like fluid; skin quite cold and somewhat livid; eyes sunk, and features contracted, and the expression anxious; tongue white; pulse scarcely perceptible; great thirst; urine suppressed since last night. Was yesterday attacked with diarrhoea, and at six this morning with the vomiting and purging of the present whey-like fluid. *To have one grain of calomel with one drop of laudanum every five minutes. After half-an-hour the laudanum only with every alternate pill.*

12 at Noon. Has taken his pills regularly. The purging continues, but has not been sick lately; skin less cold; pulse very feeble. *Continue the pills*

8 P.M. Skin of a natural temperature. Has greatly improved in all his symptoms. *A pill every half hour, but to be discontinued after four hours if he remains better.*

17th. 7 A.M. Has passed a pretty good night; pulse natural; tongue clean; no thirst; has passed water after thirty-six hours suppression; bowels open, motions black.

18th. Is quite convalescent. No pytalism.

CASE VI. Susanna Curry, aged eighteen. Admitted into the hospital in a state of extreme collapse. *A grain of calomel every five minutes.* Was nearly convalescent after taking one hundred and fifty grains, when the patient's mother, admitted to see her, gave her an orange, and renewed the disease to nearly all its former violence. She was in a state of collapse, with the surface livid and cold for three days, and was not convalescent until three hundred grains had been taken. Left the hospital recovered in ten days.

CASE VII.—Mary Reed, aged eighteen. Admitted into the hospital at the same time as the above and in the same intense state of collapse. *Took upwards of two hundred grains of calomel, and recovered in eight days.*

CASE VIII.—John Vaughan, aged thirty-two, a tramp of drunken habits; admitted into the hospital August 14th. 11 P.M. Is affected with the usual characteristic discharges; skin cold and livid; pulse not perceptible at the wrist of the right arm; has had a diarrhoea two days. *To have a grain of calomel with a drop of laudanum every five minutes.*

15th. 10 a.m. Has been closely attended through the night by Mr. Hunt; has taken seventy pills. The pulse is now quite distinguishable; the skin is still cold and livid; the eyes much sunk; the voice very hoarse; the vomiting and purging as before. *To continue the pills.*

2 P.M. Has not been so well during the last hour; purging and vomiting still continue, and the skin is still cold and livid, but without any dampness; countenance and voice still the same. *To take two grains of calomel every five minutes for an hour, and afterwards one as before. To have an enema of broth and a teaspoonful of brandy occasionally.*

5 P.M. Is better; purging stopping; sick only once. *Continue the pills, omitting the laudanum.*

9 P.M. The skin is improved in its temperature, but is still cold and livid; the eyes are also still sunk, and the voice hoarse; some sickness. *The pill to be continued as before, every five minutes.*

16th. 7 A.M. Has had a good deal of sleep; the voice still choleraic; pulse feeble; skin less cold and livid; purging still characteristic; has taken his pills regularly when awake; has taken some beef tea. *To have an enema of broth. Continue the pills.*

7 P.M. The countenance somewhat better, but the skin is still cold. *Continue the pills.*

17th. 7 A.M. Has passed a good night, and is considerably better; stools of an ash colour; passed water for the first time for seventy-two hours; skin of a natural warmth; countenance and voice greatly improved; pulse calm. *Discontinue the pills; to have an enema of broth, and effervescing powders.*

18th. Has passed a good night, and declares himself to be quite well.

From this time during the next two days continued to improve, and on the 21st left the hospital quite well and without any soreness of the month, although he had taken the large quantity of five hundred and eighty grains of calomel between the evening of the 14th and the morning of the 17th.

CASE IX. William Dimond, aged sixty-eight years, a blind man, was seen by Mr. Jenkins and Dr. Hencsey. In extreme collapse; was pulseless for some time; took one grain of calomel every five minutes for twenty-four hours; was very attentively nursed by his wife; and was dressed and walking about down-stairs on the third day; had no ptyalism.

CASE X.—Mary Gambling, aged ninety-two years, seen by the hospital assistant, Aug. 16th. 2 P.M. Is purging and vomiting a whey-like fluid in very profuse quantities; skin very cold and slightly livid; the eyes sunk, and features contracted; great thirst; much oppression at the chest; voice hoarse; cramps of the feet and ancles; pulse very feeble; urine suppressed; has been affected with diarrhoea during the last ten days, and was seized this morning with dizziness and staggering; shortly afterwards became sick. *To have one grain of calomel every five minutes for an hour, and afterwards every ten minutes.*

7 P.M. Has taken her pills regularly; skin less cold; no cramps; pulse firmer; less thirst; the purging and vomiting continued, but the quantity discharged is lessened. *To take a pill every twenty minutes.*

17th. 6 A.M. Has taken only twenty pills during the night; still some sickness and thirst, though both greatly lessened; purging abated and the motions are dark; skin of nearly a natural temperature; countenance and pulse much improved; voice natural; urine still suppressed. *To take a pill every hour, with one or two doses of the eretaceous mixture.*

18th. Urine still suppressed; in other respects is much better; has still some sickness and purging, but the discharge is no longer whey-like. *Discontinue the pills; to have boiled rice and some gruel with wine.*

19th. Has continued to improve, and has passed a good night; no sickness; tongue clean; bowels only once moved; motions dark; has passed some urine after *seventy hours* suppression.

20th. Has continued to improve, and is sitting up in bed, smoking a pipe, and declares herself to be "quite hearty."

24th. Is down stairs quite well, and sitting at tea with her daughter; and has walked out into the yard; no pytalism. This patient lived to the age of 103.

In reference to the value of time in the treatment of this disease, and with the view to take advantage of it, I made it a rule to keep myself amply provided with the small calomel pills, so that at my first visit I might supply the remedy and immediately commence the use of it. In too many cases the patients had become pulseless before I could reach them, and when no time could be afforded for the delay which must ensue had the medicine not been at hand. Another point of importance was in supplying the attendant with the means of measuring the intervals between the times for giving the pills, and where no clock or watch was at hand, I provided small sand glasses of short measurement which served their purpose well. The greatest difficulty however which I had to contend with was in respect to the want of attention on the part of the nurses. In the epidemic of 1832, the alarm about infection was general, and the greatest difficulty prevailed in getting suitable nurses. Even the near relatives of the patients shrunk from that duty. None indeed could be relied on but wives and mothers, and no failure of duty occurred with them. Happily, however, the medicine to be given was not complicated with any other treatment whatever; so that one attendant was ordinarily sufficient. Where I saw cause for mistrust in the hired nurse, I promised a gratuity if the patient recovered. Having at that early trial of the calomel, the great question of its value to establish, my visits to my patients were frequent, and the supervision of the nurses constant, and I can well appreciate the importance of that assiduous attention at the bedside which was so honorable to Mr. Morley and other gentlemen, whose names appear on the following pages, and whose great success became thereby so remarkable.

No. 2.—A TABULAR VIEW of Fifty Cases of Cholera in the Stage of Collapse, containing a Statement of the Quantity of Calomel given in one or two Grain doses, to each Patient, and the day on which entire Recovery took place :—Average quantity of Calomel to each Patient, 128 grains.—Average duration of disease four days.

\* \* \* Those marked with a \* had a slight soreness of the mouth.

No.	Name.	Age.	Degree of Intensity.	Quantity of Calomel taken.	Duration of Disease.	By whom seen.
				Grs.	Days.	
*1	Thornton	42	Pulseless	130	Three	Dr. Clanny
2	Lotherington	22	Ditto	134	Three	Mr. Sharpe
3	Souter	7	Ditto	36	Three	Ditto
4	Anderson	1½	Ditto	27	Four	Hospital Assistants
5	Vaughan	32	Ditto	580	Six	Hospital.
6	Elliott	14	Extreme collapse	62	Four	Hospital Assistant
7	Gambling	92	Ditto	80	Four	Mr. Sharpe This patient lived to the age 103.
8	Millington	9	Pulseless	151	Nine	Hospital Assistant
9	Paver	42	Medium	62	Two	Ditto
10	Pullan	38	Ditto	88	Three	Ditto
11	Carter	11	Extreme	120	Four	Ditto
12	Fell	10	Ditto	100	Two	Ditto
13	Curry	18	Extreme	300	Ten	Hospital
14	Reed	18	Ditto	200	Eight	Ditto
15	Evans	25	Ditto	200	Twelve	Ditto
16	Barnsly	20	Ditto	150	Five	Urine suppressed 76 hours
*17	Thompson	30	Ditto	200	Eight	Hospital Assistant
18	Harland	3	Ditto	150	Three	
19	Taylor	5	Pulseless	170	Five	
20	Thompson	72	Ditto	200	Four	Hospital
21	Dimond	98	Ditto	220	Three	Mr. Sharpe
22	Thompson	24	Extreme	100	Three	Ditto
23	Forbes	10	Ditto	120	Four	Hospital. In collapse two days, while at home, from irregularity in taking his pills
24	Chapman	16	Pulseless	160	Four	
25	Mortimer	10	Extreme	100	Three	Mr. Sharpe
*26	Hobson	63	Ditto	200	Five	Slight ptyalism
27	Walkinson	36	Ditto	250	Five	
28	Blackburne	63	Ditto	300	Five	
*29	The Wife	64	Ditto	180	Five	Slight ptyalism
30	Brown	30	Ditto	260	Four	Attended chiefly by Mr. Sharpe.
31	Larkin	34	Extreme	180	Six	
32	The Daughter	12	Ditto	130	Four	
33	Smith	24	Ditto	200	Six	Was enceinte, and went full time
34	Bent	30	Severe	60	Three	
35	Sargesis	40	Ditto	50	Three	Seen first by Mr. Sharpe. This
36	Melling	14	Extreme	180	Four	patient and all those following,
37	Johnson	34	Ditto	90	Two	were seen in company with Dr.
38	Skeller	11	Ditto	110	Three	Henesy, and Messrs. Marston
39	Hardy	1	Ditto	15	Two	and Jenkins, and by the
40	Holdstock	1½	Medium	12	Three	Cholera Hospital Assistants.
41	Cockrell	40	Extreme	214	Six	
42	Atlas	1½	Pulseless	30	Four	
43	Wright	30	Extreme	80	Two	
44	Martin	19	Slight	8	Four	
45	Mason	2	Extreme	30	Two	
46	Gornell	5	Ditto	63	Three	
47	Hutchinson	24	Medium	15	Two	
48	Cuthbert	1	Ditto	15	Two	
49	Tweddlo	14	Extreme	48	Four	
50	Bullers	6	Ditto	30	Two	



SECTION II.—LETTERS AND REPORTS ON THE TREATMENT BY CALOMEL  
FROM THE MEDICAL PRACTITIONERS OF GREAT BRITAIN AND AMERICA,  
AND REFERRED TO IN THE FOREGOING MEMOIR.

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No. 3.

*Letter from Jonathan Morley, Esq., Surgeon, Blackburn, Lancashire,  
To the Editor of "THE LANCET."*

SIR,—My attention has been arrested by two deeply interesting and very valuable papers on the subject of cholera, recently contributed to your journal by Dr. Ayre, of Hull. I have not the happiness to know Dr. Ayre personally, but I should be unjust to him, and, as I conceive, false to the best interests of humanity, if I did not now declare the amount of success which I have met with in the treatment of Asiatic cholera, by the following plan, recommended by him.

I trust you will consider the following facts worthy of insertion in your columns: and should they, as I hope they will, secure the extension of Dr. Ayre's method of treatment, in the event of this fearful disease becoming more prevalent, I shall rejoice in the conviction that I have contributed, however humbly, to diminish the mortality which has hitherto, under every other system of treatment, been so uniformly great.

At the time of the appearance of the disease in this town, in 1834, I was resident surgeon at the dispensary, and during its prevalence I directed, or rather personally conducted the treatment of thirty-three cases. Of this number three cases only were saved—these, I have no hesitation in saying, were examples of the most malignant form of the disease, and they were saved by Dr. Ayre's plan of treatment. I sat down by the bedside of my patient with my calomel and laudanum, administering them according to Dr. Ayre's suggestions, (and which, unfortunately, I had not become earlier acquainted with,) and never left the room until I considered the patient safe, until reaction was established. Of course, the application of heat in every available form was had recourse to; and what I think of some importance, the urgent thirst was allayed, or rather treated, by a teaspoonful only at once of cold water. I had previously adopted the plans recommended by Mr. Orton, Mr. Kennedy, Drs. Russell and Barry, as well as those followed in several cholera hospitals in Leeds, Newcastle, &c., and with one uniform result. I wish to add that in August, 1846, I was called to a case of Asiatic

cholera, occurring in a man who recently left Liverpool, and who was travelling about the country as a hawker of silk handkerchiefs. He had been seized at three a.m. with severe and abundant vomiting and purging, the later excretion presenting the well-known appearance of rice-water and at six a.m. I saw him. His pulse was perfectly extinct at the wrist, his voice was inaudible, his skin and nails blue, and the form much shrivelled; his tongue and even breath quite cold, and the cramps were terrific. Adopting at once all the proper collateral measures, I sat down, and commenced giving two grains of calomel and four drops of laudanum every five minutes for an hour, then every ten minutes for two hours, and at the end of three hours the pulse became occasionally perceptible at the wrist. I persevered with the remedies at longer intervals, until reaction was fully established. Within a week from the attack the man left the town quite convalescent, having undergone, however, a slight salivation. The result of these cases has given me a confidence in the plan of treatment recommended by Dr. Ayre, which I do not at all feel in any other, and I believe it will be the conviction of all who fairly test the plan, that to him are due the warmest thanks of the profession and of the public.

I am, Sir, your very humble servant,

J. MORLEY.

Blackburn, Nov. 13, 1856.

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No. 4.

*Extract of a Letter from Jonathan Morley, Esq., of Blackburn, dated April 7th, 1857, and addressed to Dr. Ayre.*

On the 27th of last July, I was sent for in consultation to see a Mr. John Walker, of St. Albans, near this town, about 4 or 5 a.m., I found his medical man had been with him several hours, for the patient, having been suffering from diarrhoea for several days, had suddenly become affected with an alarming form of cholera. Mr. W. had quite lost his voice, his pulse was merely an occasional flutter, his skin, and particularly the nails, were blue, the former being shrunk and sodden, and the tongue and breath quite cold. He was a man about 40 years, with an appearance of more than 60. Rice-water dejections were pouring from the bowels in quarts, and vomiting of a watery fluid was almost incessant; in fact the man was manifestly dying. I lost no time in taking his medical attendant aside, and, asking him what plan he had adopted, soon found that he had gone through all the common routine. I at once explained your plan, and said emphatically that under any other the patient *must die*. He, however, opposed it, but while, however, I was trying to induce him to permit me to try it, the patient's friends became impatient; they knocked at the door, and our consultation

was interrupted in a way that rejoiced me. He had just time to say, "Well, do whatever you like;" and, I to reply, "Then I will guarantee his life." Both of us sat with the patient five hours; I then left for about an hour, Mr. S. remaining; after that I remained two hours, and saw the patient again in the evening, Mr. S. staying into the night. The calomel in two-grain doses, with about two drops of laudanum, was at first given every five minutes; after two or three hours, every ten minutes, the interval being gradually increased; and, in fine, the patient, a highly respectable man, was restored to his wife and eight children. My friend expressed himself as perfectly astonished, and said that in future he should never adopt any other plan.

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No. 5.

### UNITED STATES OF AMERICA.

SUCCESS OF DR. AYRE'S PLAN OF TREATMENT AT WISCONSIN.

*To the Editor of "THE LANCET."*

SIR,—In the faith of reason and disinterestedness, I offer a willing homage to the merits of Dr. Ayre, of Hull, and his system of treatment in Asiatic cholera. Its advantages are—

First. Simplicity, and easy adaptation in practice.

Second. The uniform success which has followed its adoption in this portion of the north-western states of the American union.

Thirdly. That, however empirical and exceptionable the administration of calomel may be in any specific disease, yet its advantages over every other remedy, in the late malady, warranted its constant use.

In twenty cases of average severity, occurring in my practice, this drug, singly, or in combination with acetate of morphine, as the exigency of the case demanded, proved a mine of almost un-failing success. That similar results followed the labours of many of my professional brethren, who pursued this course, in Iowa, Illinois, and Wisconsin, is undoubted; and I take pleasure, indeed, in recording the fact, that more than three-fourths of the active practitioners in those states, and, indeed, of the union, followed the system of Dr. Ayre, or a practice very closely allied to it, with very general success.

I am, Sir, very truly,

JAMES S. KELSO, M.D.

White Oak Springs, Wisconsin, U.S., Dec. 29, 1840.

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No. 6.

### ON THE SUCCESSFUL TREATMENT OF CHOLERA, IN CANADA.

By GEORGE D. GIBB, M.D., &c.

In the month of February, 1848, on leaving the shores of England for Canada, I determined, after an attentive perusal of the papers of Dr. Ayre, of Hull, published in the second volume of *The*

*Lancet*, for 1848, to adopt the plan of treatment in cholera which had proved so eminently successful in his hands—namely, that of small and repeated doses of calomel. Since that time opportunities have been afforded me in this city (Montreal) for testing its efficacy, and it has proved so far useful in my hands, that out of ten cases I have not lost a single one. My cases, to be sure, have been few, but their successful issue encourages me in the belief that if I had had many more, nearly all might have been similarly saved. Dr. Hall, the Editor of the *British American Medical Journal*, in a paper on the calomel treatment in the Asiatic cholera, published in the August number of that periodical, has reported ten cases of recovery in his practice, all treated by calomel and camphor, and only two proving fatal. One of the deaths was from exhaustion, in an old yeoman, aged seventy, who had completely recovered from the stage of collapse under the influence of the medicine. The other was the only case amongst the ten in which recovery did not take place from that stage. In another paper on cholera, in the December number (No. 7), by Dr. Von Eschland, of Quebec, that gentleman states that out of fifty cases he only lost five, and his treatment in all was that employed by Dr. Ayre, of Hull, by small and repeated doses of calomel. My line of practice he states has been, where the premonitory symptoms only have been present, I have immediately given from ten to fifteen grains of calomel and half a grain of morphia, which in most instances have acted as a powerful sedative, arresting the diarrhoea in the course of from fifteen minutes to half-an-hour, and then producing sleep, giving a mild saline aperient, the tartrate of potassa and soda, which served to prevent any ill effects from the mercury. In all well marked cases of cholera, however, with rice-water stools and obstinate vomiting, I have commenced the treatment by giving at once from twenty to thirty grains of calomel,\* with a grain of morphia, and following it up in half-an-hour with two-grain doses of calomel, and a drop of laudanum every five, seven, or ten minutes, according to circumstances, and continuing it until the symptoms gradually ceased, and the stools had become tinged with bile. The cramps were relieved by manual friction alone. I have never regarded the quantity of calomel taken as of any moment in such a dreadful disease, trusting to combat its ill effects by proper treatment after subduing the cholera. In one of the cases the patient had taken as much as two hundred and eighty two grains; this was certainly one of the worst—she had very slight symptoms of ptialism. Among the cases of patients published by Dr. Ayre, large quantities of calomel appear to have been given; one in particular, between the evening of the 14th and the morning of the 17th, had taken five hundred and eighty grains, without even the least soreness of the mouth afterwards. I believe I am not in error in stating that more than the majority of the practitioners in this city—

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\* *A practice not to be imitated.*—J. A.



perhaps throughout the province—had adopted the calomel treatment, but administered the drug in different doses at intervals. Many here gave twenty-grain doses every twenty minutes or half-an-hour, until the disease yielded, and the success which attended them was great indeed. Some combined camphor with advantage. In two of my own cases I added two grains to a few Dover's powders, preferring to stimulate by it rather than brandy; sometimes I have used spirits of camphor and tincture of capsicum in combination. I was witness to the two first cases of cholera which occurred in this city: the first, a severe and well marked case, in a female aged 43, was treated on Mr. Bell's plan, with quinine and iron, and certainly the vomiting and purging were quickly stopped, but only to return again with renewed violence. The patient expired in thirty-six hours. The second, in the same house, and of a much more severe form, in a man aged 55, was treated at my suggestion, on Dr. Ayre's plan; and although the vomiting and purging, with dreadful cramps, did not yield for some time, under a steady and persevering administration of the calomel in small doses, and of the laudanum, the man regularly recovered. The fourth case in the order of my patients was that of a man in *articulo mortis*, but which gave me a good chance of attesting Dr. Ayre's treatment; and after a sudden and powerful reaction by plunging the feet into hot water, I poured in the small doses of calomel, with the gratifying effect of subduing the stage of collapse, and restoring my patient to health; and I most freely coincide with Dr. Ayre and Dr. Crisp, in the opinion that we ought not to despair if we are called to patients in a moribund state, for there is still a chance of saving life. It affords me peculiar pleasure in having this opportunity of recording the success attending Dr. Ayre's treatment, and so fully convinced am I of its efficacy and utility, that if I were ever to be attacked with cholera myself I should wish to be treated on its principles.

In the letter given above, from Dr. Gibb, an allusion is made to Dr. Hall, of that city, and to his success with the calomel treatment; and in the journal containing the details of his cases, I extract the following summary of his opinions on the remedial value of calomel in the treatment of this disease. "If," observes Dr. Hall, "the system is not at once paralysed, the fairest prospect is afforded to us, through calomel, of rescuing the patient from an otherwise imminent death. The calomel treatment has, then, something more than a mere claim upon us, on the grounds of theory. Its practical employment has proved as signally successful in the hands of other medical gentlemen of this city, as it has done in mine."

No 8.

*To Dr. Ayre from Dr. Cragie.*

HAMILTON, West Canada, 20th October, 1854.

DEAR SIR,—Having in our visitation of cholera, in July and August last, tried your plan of treating that formidable disease, I

feel it to be a duty to report to you the results. In only eleven cases did I succeed in getting the treatment fairly and honestly carried out, from the difficulty of getting proper attendants for the sick during the time. Of these eleven cases eight recovered from a state of collapse—one of them died on the sixth day after, from consecutive congestive fever. In all the cases collapse had fully set in before the treatment had begun, and in two of the cases, both of which recovered, it was so far advanced as to leave very little hope of recovery. The treatment consisted in giving a two-grain calomel pill every ten minutes, with a teaspoonful of cold water to wash it down. A bit of ice was allowed to dissolve in the mouth in the intervals. Nothing else was allowed until reaction was established; but when reaction commenced, and the pulse could be felt, and the breath became warm, the pill was only given every fifteen or twenty minutes. The largest quantity of calomel taken was in one case two hundred grains in twenty-four hours; and in another one hundred and sixty grains in sixteen hours. In the previous case the medicine was continued three or four hours longer than necessary; but neither in this, nor in any other case of recovery, did salivation result from the medicine, nor any other effect than reaction, and a change in the character of the stools from rice-water to dark, and often black discharges. It was very different with the premonitory diarrhœa, for which I tried calomel and opium, two grains of the former with one of the latter. This treatment was successful, but salivation frequently occurred when only four or five doses of the medicine had been taken.

In a great number of cases, where the treatment was only continued until the symptoms of reaction appeared, and was then abandoned, a relapse into collapse followed; and though the treatment was resumed, death ensued. I particularly recollect two cases of the kind, where I feel confident recovery would have resulted, had the treatment not been intermitted—in the one case for nearly three, and in the other for nearly four hours. It is not prudent or safe to relax the treatment before bilious discharges are produced. Consecutive fever occurred in four of the eight cases of recovery from collapse. Two of these were very severe, and one of them fatal. The result of my experience has produced the greatest confidence in your plan of treatment, and the profession, as well as humanity, owe you a debt of gratitude for suggesting the most successful mode of treatment yet proposed.

(Signed) W. CRAGIE, Surgeon.

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No. 9.

*Extract of a Letter to Dr. Ayre, from Dr. Jukes, of St. Catherines,  
Canada West, July 6th, 1856.*

I have seen a considerable number of cases of the Asiatic cholera in two epidemics, the last of which was during the summer

of 1854. We have had none in Canada since. I tried at that time a great variety of treatment, with very doubtful success. Towards the latter end of the epidemic I first tried the treatment by calomel, in small and repeated doses, and felt so much satisfied of its superiority over all other methods which had come under my observation, that I used no other plan of treatment until the disease disappeared; and should I ever be called upon to treat another epidemic, I should rely upon this treatment solely.

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No. 10.

## ON DR. AYRE'S TREATMENT OF MALIGNANT CHOLERA,

By JOSEPH BULLAR, M.D., Southampton.

Having had an opportunity of closely watching the effects of small and repeated doses of calomel in malignant cholera, as recommended by Dr. Ayre, of Hull, I beg briefly to state the results, reserving the details for another occasion.

There was a certain class of cases in which calomel had no effect either way; it neither shortened life, nor prolonged it; the system was insensible to its presence. These were persons about or above forty years of age, whose previous health had been feeble or impaired by indisposition, or who had been exhausted by bodily fatigue, and in whom the collapse was sudden. When first visited, shortly after the seizure, they were pulseless, cold, covered with cold sweats, vomiting and purging by stool and rice-water evacuations, and painfully cramped. Such persons died in eight, ten, or twelve hours.

In patients of the same class, where the collapse was not so sudden, the calomel was more effective; and several of these recovered who would have died otherwise.

In younger persons and in children, even when the treatment was not commenced until they were in a state of decided collapse, with all the characteristic symptoms of the malignant type of the disease, the calomel, thus given, was strikingly beneficial. Not one of such patients died, although they were in the same state, in the same locality, and some in the same houses, in which others had sunk rapidly under different treatment.

The dose given was one, and sometimes two grains of calomel, mixed with two grains of powdered white sugar, every ten minutes, until the diarrhoea had ceased, the pulse had become perceptible, and there was some warmth of surface. When the stomach was so irritable as to reject everything, four or five drops of laudanum, or two or three drops of hydrocyanic acid (L.P.), in a teaspoonful of water, were given after each powder as long as was necessary. The patients were allowed to drink as much cold water as they choose; and occasionally, in the debilitated, a little brandy was added. The secondary diarrhoea produced by the calomel, and occurring usually a few hours after the serous diarrhoea had ceased, and reaction was



established, was not interfered with. The first evacuations were of that spinach-green colour which is produced by calomel, and they gradually became yellower. Diluents, light cool broths, and farinaceous slops were given in this stage.

These observations refer exclusively to cases of malignant cholera of a very fatal type, all occurring in the same highly infected locality, all treated in the houses where they were attacked, and to the stage of decided or commencing collapse. They were cases such as I should have regarded as very hopeless before I tried Dr. Ayre's treatment—to which, I may add, I felt an *a priori* repugnance, and only resorted to, at first, as the “*aneeps remedium melius quam nullum.*”

October 1, 1848.

No. 11.

## SUCCESSFUL TREATMENT OF MALIGNANT CHOLERA ON THE PLAN OF DR. AYRE.

By GEORGE M. PRITCHETT, Esq., M.R.C.S., &c., London.

As the medical world seems so much divided in opinion respecting the treatment of Asiatic cholera, and fully coinciding in the remarks made in last week's *Lancet*, respecting the efficacy of the treatment adopted by Dr. Ayre, of Hull, as evidenced in the diminished mortality in his practice, I think it my duty to send for publication an outline of two well marked cases successfully treated by his method. Several cases at an earlier stage have come under my notice, which have yielded like a charm to a very few grain-doses of calomel with two drops of laudanum in four teaspoonfuls of brandy and water, every hour only. In a disease of so much intensity, where we have so deadly a foe to grapple with, I think practice far better than theory, and it appears to me that we have at command a safe and simple treatment, almost specific, that were it generally adopted, would deprive the disease of nearly all its fell terrors. In Dr. Ayre's paper, published in the *Lancet* of the 28th of October last, I find in 1832, that out of two hundred and nineteen cases there were one hundred and seventy six recoveries, and only forty three deaths; while in this visitation the fifty nine cases as appears in last week's *Lancet*, treated by him from the 14th to the 26th ult., were all successful, while nine treated by others all ended fatally. Surely such facts as these speak for themselves, and need no comment.

CASE I.—D. A——, a young barrister, aged twenty-five, who who had been reading hard for some time, and also weakened considerably by previous indisposition, sent for me at three p.m., May 2nd. I found him before the fire on the sofa, complaining of much pain in the bowels, with a shrunken countenance of dusky colour; frequent vomiting with diarrhoea, intermitting pulse, and slight cramp in the extremities. Thinking the attack would pass off by



ordinary remedies, 1 prescribed a calomel and opium pill, and some simple effervescent draught, with a few drops of laudanum in each dose, also brandy and water, &c. At nine P.M. I was again called, when all the symptoms were much aggravated; diarrhoea very frequent, stools as well as could be ascertained, of the rice-water character; vomiting constant; rejection of all food and medicine as soon as taken; cramps violent all over the body and extremities; pulse very feeble and intermitting; the skin quite cold and livid; and the face had assumed that ghastly appearance so well known in this disease. No urine had passed since the commencement of the attack; and extreme collapse was rapidly supervening. The treatment adopted, was simply a one-grain calomel pill every quarter of an hour, with two drops of laudanum in four teaspoonfuls of brandy and water, together with bottles of hot water applied to the extremities, and a mustard cataplasm to the pit of the stomach; in one hour the diarrhoea and vomiting ceased; in four, reaction had commenced, and the cramps were much lessened; twelve doses only were given in all. The after treatment was a little troublesome from the previously weakened state of the patient, but under simple remedies he rapidly progressed, and no prominent symptom need be enumerated.

CASE II.—Mrs. S——, aged forty, living over stables in Chenies-mews, sent for me on the 11th of July, at seven A.M., I found she had had diarrhoea for some days previously, and had for some hours been getting gradually worse; in fact, all the symptoms of cholera were present, constant vomiting and purging, with well-marked rice-water evacuations, quite unmixed with any feculent matter; urine suppressed; violent cramps; livid countenance; shrunk features; pulse scarcely to be felt; coldness of the surface, and collapse commencing. The treatment adopted was precisely the same as in Case 1, with the same results. In one hour the vomiting and purging ceased; and in four the skin was getting warm; the calomel was continued at intervals of two and three hours during the day, the cramps not ceasing entirely.

July 12th.—Patient much better, only weak from the effects of the attack, with slight pyalism of no importance. The patient progressed rapidly under simple treatment, and in a few days was quite well.

Store Street, Bedford Square, August, 1849.

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No. 12.

### MALIGNANT CHOLERA,—DR. AYRE'S PLAN OF TREATMENT.

*To the Editor of "The LANCET."*

SIR,—The following table is merely a mite, but still, in my opinion, tends to confirm the views of Dr. Ayre, of Hull, concerning the treatment of Asiatic cholera, in this country.

The number of cases I prescribed for from the 6th of July to the 6th of October, 1849, was 985, of these,—

107 were intense collapse, 7 deaths; 678 rice-water purging, no deaths; 200 trifling diarrhoea, no deaths.

In the first two cases of intense collapse, I ordered salines; both died; next two, of intense collapse, chloroform; one died; the next two, calomel alone; both recovered.

I continued ordering calomel in all the other cases, and the result was as above stated. No opium. The diarrhoea. Opium.

I have invariably found that where the stools are light coloured or rice-water evacuations, calomel was the sheet-anchor. I have never ordered stimulants.

I remain, Sir, yours most obediently,

J. JONES.

Wandsworth Road, 1849.

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No. 13.

### A CASE ILLUSTRATING THE EFFICACY OF DR. AYRE'S TREATMENT OF CHOLERA.

By W. N. SPONG, Esq., Surgeon, Feversham, Kent.

*The Lancet* has contained several valuable papers upon cholera, by Dr. Ayre. It appears to me that while the profession is casting about for new methods of treatment, we are already in possession of a most successful one, giving as high a per centage of recovery as the desperate nature of the disease can be reasonably expected to admit. The above-named gentleman recommends small doses of calomel and opium every few minutes, so long as the stage of collapse continues; and his extraordinary success is confirmed by competent eye-witnesses. The following case was sufficiently formidable to fairly test its powers, and to those who are yet undetermined as to the treatment of this fearful malady, I can confidently recommend it, and will boldly affirm, that when tried at the bar of experience it will not be found wanting.

Edward C—, aged thirty-seven, a whitesmith, spare habit of body, for years past has enjoyed good health; accustomed to drink freely of porter. Has been employed of late at Siltingbourne, a few miles from this town, where several cases of cholera have occurred.

July 20th.—Had some pain about the umbilicus early this morning, and felt generally indisposed, but was able to work until noon. Three or four hours after this he failed rapidly, and was forthwith brought home. At seven p.m. I first saw him. Present state: the whole person of a livid blue colour, cold and shrunken; severe cramps of all the extremities, of the legs especially; pulse small and quivering, constant vomiting, urinary and biliary secretions suppressed; has had above thirty rice-water evacuations within the last few hours; sense of constriction across the thorax;

intellect clear; vox cholericæ; collapse. *Treatment*:—To have two grains of calomel and two drops of tincture of opium every ten minutes. This is Dr. Ayre's plan of treatment. In addition, to have a hot air bath, and take ten drops of chloroform with every alternate dose of the medicine; also, a drachm of strong mercurial ointment to be placed in each axilla; this was rubbed in by the patient himself, in consequence of his frequent spasmodic movements. Twenty-seven drops of chloroform are equal to five minims.

21st.—One A.M. After six hours treatment there is decided amendment; the attacks of cramp and vomiting are less severe, and the intervals prolonged. Extreme thirst, but if more than half an ounce of fluid is taken at one time, it is instantly rejected, commencing reaction. Omit the opiate and chloroform. One P.M.: Improving; reaction fully established; the purging has ceased; cramps and vomiting only occasionally recur. To take calomel every half hour.

22nd.—At six this morning a well-marked crisis took place. The urinary secretion was restored after thirty-eight hours suppression, the liver performed its functions, and a black coloured motion was passed, followed by several characteristic chopped spinach stools. From this hour he gradually progressed. To take small doses of solution of acetate of ammonia with the alkali slightly in excess, and no other medicine.

27th.—Convalescent.

No. 14.

## SUCCESSFUL TREATMENT OF CHOLERA, BY SMALL AND REPEATED DOSES OF CALOMEL.

By JOHN PICKOP, Esq., M.R.C.S., &c., Blackburn.

I beg to forward you the subjoined case, as proving the power and efficacy of calomel in subduing cholera in its worst form, when administered as recommended by Dr. Ayre.

My patient, a fine athletic young man, aged twenty-five, after a diarrhœa, which continued three days, was seized on the 1st of September with every symptom of Asiatic cholera. I visited him at half-past twelve P.M. I found him in bed, complaining of severe pain in the bowels and legs; haggard expression of countenance; voice almost inaudible; pulse very feeble; cold, livid condition of the skin; extreme thirst, with incessant vomiting and purging of the peculiar rice-water evacuations. *Treatment*:—A grain of calomel every five minutes; simple effervescing draughts, with two minims of tincture of opium every hour; toast and barley water ad libitum. Visited him three times betwixt then and nine P.M., to ensure the steady exhibition of the calomel, but found little change until that hour. He was then warmer; pulse very feeble, but improving;

purging less severe; vomiting still urgent; no urine passed; voice better. Ordered a grain of calomel every fifteen minutes; draughts as before.

Sept. 2nd.—Eight A.M.: Considerable improvement; pulse very quick, but fuller; has dozed at intervals during the night; perfectly warm; restless and very sick. Ordered one grain of calomel every hour, and one minim and a half of prussic acid every hour with the draught, instead of the tincture of opium; cantharides blister to the epigastrium. Nine P.M.: Progressing favourably; sickness not so urgent. Omit the calomel; a draught every third hour (unless asleep.)

3rd.—Nine A.M.: Slept a great part of the night; has passed urine twice for the first time, and had two bilious evacuations. After this, his recovery was so rapid and easy, that on the 5th he was removed in a gig to his own home—a distance of five miles. Calomel taken, one hundred and forty grains; no ptyalism.

I have also given calomel in grain doses in three other cases of less severity, every fifteen minutes, with simple effervescing draughts every hour, containing two minims of tincture of opium; and in each case the vomiting and purging have been arrested, as if under the influence of a charm. Two out of three cases were salivated, though in one case only twenty grains were taken; in the other, fifteen grains.

Blackburn, Sept., 1849.

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No. 15.

## OBSERVATIONS ON THE TREATMENT OF CHOLERA,

By GEORGE ALLEN, Esq., L.S.A.,

DISTRICT SURGEON OF ST. ANN'S SOHO.

In bringing before the profession the result of my experience in the treatment of the present epidemic, as district surgeon of St. Ann's parish, where the plague seemed for a season to have concentrated its most deadly virus, I feel I am merely performing a public duty, the omission of which would be highly censurable. In the present paper I make no pretence to originality whatever. The treatment of cholera by mercury was, I believe, that which in 1832 obtained the greatest confidence of the profession, and has since been ably and successfully practised by Dr. Ayre and others. If I am not mistaken, it is that which every day's experience will prove to be alone worthy of that confidence, and to be the sole remedy upon which, when properly and regularly administered, we can depend for the salvation of our patients. Upon my appointment as one of the district surgeons of St. Ann's, I had no prejudice in favour of any line of treatment, and in my first two cases employed the sulphuric acid, both of which terminated fatally. I then vigorously adopted the calomel treatment.

Having now given the profession a faithful report of my treat-



ment of cholera, with the result, I shall add a few practical observations which occur to my mind, one or two of which I have not seen in authors on the subject. Out of thirty cases of cholera I had twelve deaths, two of which were treated by the sulphuric acid, which leave but ten treated by mercury. One aborted, and sunk immediately after delivery. One was convalescent, but was destroyed by repeated doses of brandy, administered by a drunken father. Another sunk from having no attendant but a drunken nurse. One was exposed, during collapse, to the draught caused by an open window and door, and another was drenched with chilled water by an hydropathist. I found in one of the fatal cases that the medicine was improperly mixed with water, the calomel adhering to the sides of the vessel; so that, fairly speaking, I could trace six of the ten deaths to incidental circumstances. I remarked those cases made the best recoveries where no stimulants were given; and during convalescence, when the cholera had disappeared, there was in almost every case subacute gastritis, whether arising from the mercury, stimulants given, or the disease itself, I cannot pretend to say, but this complication readily yielded to blisters and iced water. In conclusion, I can say with truth, that from the result of my experience I consider collapsed cholera, if seen by the medical man in time, and if his instructions are rigorously carried out, a very manageable and by no means fatal disease. In few instances did the calomel fail, when administered in two grain doses at short intervals, to produce reaction, by diminishing the evacuations, promoting perspiration, causing the kidneys to resume their functions, and, in fact, restoring the general harmony of the system. The greatest caution should be observed in permitting the patient to return to solid food, one of my patients having nearly fallen a victim to his imprudence in this respect.

Soho, October, 1854.

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No. 16.

## TREATMENT OF CHOLERA ON THE PLAN OF DR. AYRE.

By GEORGE BURTON PAYNE, M.D., Warwick Square.

Whilst the pathology of cholera continues so disputed a point; whilst the disease is daily spreading, and adding to the number of its victims, to the opprobrium of the profession; would it not be more serviceable for medical men simply to record the success of any given mode of treatment, than to speculate upon the occult nature of the disease, for the purpose of establishing a supposed "rational" treatment.

I have myself much pleasure in bearing testimony to the success of the plan proposed by Dr. Ayre, of Hull, which I have steadily pursued (occasionally modified), and have lost but one patient (a boy) throughout the whole epidemic, although I have had under my care very many cases, in all stages of the complaint. But one

remarkable recovery induces me to send you a brief account of the case, which, if you think worthy a place in your practical journal, is very much at your service.

Mrs. B——. Aug. 23. Came over from Lambeth to Westminster, to see some friends, when she was suddenly seized with vertigo, inability to stand, followed by vomiting and purging, and severe abdominal pain. She immediately took a mixture, composed of spirit of turpentine, and the tinctures of capsicum and opium (dispensed to some receipt), which had aggravated the symptoms, and I found her about eight o'clock in the evening, vomiting incessantly the rice-water ejection, with violent cramps in the feet and legs, constant involuntary purging, &c. Ordered sinapisms over the whole abdomen, hot bottles to feet, &c., and to take chloride of mercury, two grains every five minutes, followed by tincture of opium, five minims; compound spirit of ammonia, six minims; water, one drachm. At nine o'clock, sickness, purging, and pains much relieved; a genial heat and gentle perspiration breaking out over the entire surface of the body. To continue chloride of mercury, one grain every half-hour, alone. At three A.M., was called up, and found the woman cold, livid, pulseless at the wrist, the legs completely flexed upon the body. Had so far improved up to twelve o'clock, as to be able to sit up in bed, and had been persuaded to take a glass of brandy. The sickness and pains almost immediately returned, and continued with increasing violence until the time I was called up. Although believing the case to be hopeless—so great was the prostration—I gave her ether, one drachm; tincture of opium, ten minims, (one dose); with chloride of mercury, two grains every five minutes, placed upon the tongue without anything else. This was done punctually for two hours, and at seven o'clock I had the satisfaction of finding my patient sleeping, and in profuse perspiration; in a word, reaction was completely established. She took a grain-and-a-half of calomel every two hours throughout the day, and with attention to diet alone, recovered, without any ill effects from the quantity of chloride of mercury taken.

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No. 17.

SHEFFIELD, February 21st, 1833.

SIR,—In compliance with a request made through the medium of No. 493, of "*The Lancet*," we beg to transmit to you the result of our treatment of cholera, which plan of treatment was adopted from your suggestion of giving small and frequently repeated doses of calomel; and which you will find in comparing the number of deaths with the recoveries, to have been successful and satisfactory to a very high degree.

We remain, Sir, your obedient Servants,  
KNOWLES WILSON & WRIGHT.

Total number of cases .....	103
Number of deaths .....	23
„ of those who reached the collapsed stage .....	54
„ of those who had the disease clearly developed .....	21
„ of those who had premonitory symptoms to a greater or less extent .....	21

Out of the twenty-three that died, we may remark that in five the medicine was given with the greatest irregularity, that four had been on our sick list for as many days previous, ill of other diseases; one for instance in typhus fever; that three were confirmed drunkards, and lastly, that one was near eighty-years of age. Therefore it will be seen that out of the twenty-three individuals in whom the disease proved fatal, the medicine had only a fair chance of producing its effects in ten.

N.B.—It may perhaps be worth relating, that in one case we gave the calomel to the extent of three-hundred grains.

P.S.—I shall have great pleasure in answering any questions, or giving you any further information I can respecting the cholera; and I feel quite satisfied that your mode of treatment will ultimately be the one most generally had recourse to.

K. W.

To Dr. Ayre, Hull.

No. 18.

*Letter from Dr. Carter, of Brighton, late of New Shoreham.*

“I have been called, altogether, to fifty-eight cases of cholera, or which would have become so but for the calomel; of these I lost three at the very beginning, wherein I did not employ calomel; and the only two deaths I have had since I adopted the calomel are recorded in the accompanying letter in the *Sussex Express*. I doubt whether any one of your correspondents can adduce more convincing proofs of the wonderful effects of your treatment.

“William Adams, aged two years, was taken ill between five and six in the morning of September 9th, with violent vomiting and purging of the rice-water discharges. I first saw the patient at nine A.M., who was then speedily passing into the stage of collapse. To have one grain of calomel, with one drop of laudanum, every ten minutes. At eleven A.M. he was in a complete state of collapse; the child lay cold, clammy, blue, and pulseless; the extremities felt like flagstones bedewed with moisture, and the face and chest partook of the death-like frigidity. Let the medicine be continued, made stronger, but not so much laudanum. At one P.M. the vomiting and purging had ceased, but the child, if possible, was colder than before. It lay an inanimate mass, with its eyes sunken in their orbits, and the limbs apparently sinking into the rigidity of death. Continued the medicines—persevered. At four P.M. there was a manifest improvement; warmth began to return to the surface. At six P.M. my little patient was convalescent. In two

days the patient became quite well, and was soon able to walk out, and has never experienced the slightest inconvenience from the enormous quantity of medicine that was given. This patient, while under treatment, was visited by the Rev. M. Wheeler, vicar of the parish."

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No. 19.

*Letter from Mr. Merry, of Hemel Hempstead.*

"I commenced by giving the patient when in a state of collapse, for an adult, one grain of calomel every ten minutes, continued in some cases, many hours, or as I perceived improvement, and have had the satisfaction in many cases which appeared perfectly hopeless, to see such an improvement as appeared to me impossible. During the years 1832, 1846, and 1853, it has fallen to my lot to see a great many cases of Asiatic cholera, and to have had the opportunity of trying every plan suggested; but, from my observation of facts, I feel satisfied that the only chance of success with true Asiatic cholera is the calomel treatment."

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No. 20.

*From Dr. Shearman, of Rotherham.*

"I have had, in my own practice, only two cases of true cholera, both in boys of about the age of eight. Both the boys resided in the same locality in which the cholera broke out so fearfully at its first visitation—poorly fed, and badly lodged, and both in the same house. One began with diarrhoea, which continued two days before I was consulted. I found him in a most complete collapse, with rice-water evacuations, choleraic voice, livid skin, cramps, and suppression of the kidneys. I gave two grains of calomel every five minutes pretty regularly for six hours, and let him drink freely of cold water in which a minute quantity of a neutral salt was contained. At the end of about six hours, the sickness began to abate; he became warm, the cramps moderated, and he quite recovered in five or six days. The other boy I saw in diarrhoea two days after he first began: on his advancing into collapse, my treatment was exactly the same. This boy showed symptoms of improvement in four hours, and recovered, but his recovery was slower. I gave about thirty drops of an opiate to each."

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*A second Letter from Dr. Shearman, of Rotherham,  
to "The LANCET," 1854.*

"From the previous manner of the approach and progress of cholera, it is not improbable that we are on the eve of another outbreak. In 1832 and 1833, I saw a great many cases of this



terrible malady. At that time we were advised by the Central Board of Health, under the direction of Drs. Russell and Barry, to treat the cases with a hot-air bath, large doses of calomel and opium, brandy, &c., &c. I have no hesitation in stating that many more persons would have recovered if the hot-air bath had not been used, and cold water had been liberally allowed the wretched victims to drink. At that period every person who was attacked at the beginning of an outbreak of the epidemic died; as the virulence of the epidemic subsided, they began to recover in spite of the treatment. When we were visited by the disease in 1848-9, I had only two well-marked cases. These two I carefully treated on Dr. Ayre's plan, and they both recovered.

"A fortnight since, I had another well-marked case, which I give briefly below. On the 30th of May last, I was called to see Thomas S—, a respectable, strong, healthy man, residing in Rising's-yard, College-road, Masbro'. I found he had been attended by a druggist, in consequence of a diarrhœa for the last three days, and he went to bed somewhat relieved. When I saw him at four o'clock A.M., he was perfectly cold, icy-cold tongue, extremities shrunk and blue, eyes sunk, features shrunk and livid, nails almost black, the peculiar choleraic voice (his natural voice being very loud and strong), most dreadful cramps in his arms, stomach, and legs, constant vomiting and purging a large quantity of fluid like dirty rice-water; had passed no water for twenty-four hours; had his perfect intellect. I did not think he would live many hours, he was so marbly cold, and so completely in collapse. I gave him five grains of calomel and three grains of opium to relieve the cramp, which failed. I then put him upon two grains of calomel every ten or fifteen minutes, allowing cold water. I visited him again at seven and nine A.M., and at two, five, and eight P.M., and at midnight; not the least improvement took place until eight, when slight reaction occurred. This was encouraged. He had now taken eighty grains of calomel. The purging ceased, but the vomiting continued, and violent hiccups attacked him. These symptoms continued unabated for the two following days; no urine being secreted for forty-eight hours after I saw him. I gave him the calomel much less frequently. He gradually improved, and on the 7th of June (nine days) was convalescent. The mercury has shown no specific effect. In the neighbourhood where this person lives are two open cesspools, and no proper drain. I had the sanitary condition of the place improved as much as possible, and, although before that time, almost every inhabitant had been suffering from diarrhœa, no other case of real cholera has occurred.

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No. 21.

*From Dr. Taylor, of Maghull, near Liverpool.*

"The calomel treatment, which was the one principally followed by myself and colleagues, was most successful. The dose usually

given was two grains every five minutes, until the patient was decidedly improved. The greatest amount taken was by a female aged twenty-four, who took one thousand one hundred and sixty grains, with little appearance of salivation. A boy of sixteen, took nine hundred grains, without any appearance of salivation whatever.\* Both these patients got perfectly well. The remedy was given to patients of all ages. From five to twenty grains generally produced the desired effects. Children under the calomel treatment would come round in a few hours. Out of 147 cases, I had 126 recoveries, and 21 deaths, or about a seventh part of the whole: this includes all ages and various states, from the slight to the complete collapse."

No. 22.

*Extracts from a letter by Dr. Stanley, of Whitehaven, published in "The LANCET," No. 471, and dated August, 1832.*

"I had made up my mind to give the mercurial plan a trial on the first favourable opportunity. I selected three cases (in the hospital), the one, a collier, aged thirty-six, admitted in the stage of collapse; pulse gone; skin cold and blue; voice extremely feeble; strong characteristic expression of countenance; vomiting and purging. The second, a sailor, aged seventeen, the collapse commencing; diminished pulse; coldness of surface; violent and frequent vomiting and purging; cramps of the muscles, with premonitory symptoms for three or four days. The third, a collier, aged twenty-eight, collapse commencing; violent spasms; vomiting and purging; feeble pulse, with cold and livid extremities." The writer pursued the same treatment with all, but began with giving a large dose of calomel four times in the first hour, and then proceeded in the following plan:—"A pill containing one grain-and-a-half of calomel, with two drops of laudanum with each pill, every quarter of an hour. This plan was continued for twenty-four hours without intermission; at the end of which period, by gradual steps, the

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\* *The above examples of the large quantity of calomel which may be taken in this disease with impunity fall greatly short of one occurring in St. George's Hospital, as we learn from a report made of the case, where a patient who was pulseless during four hours, took thirty-six grains of calomel in three-grain doses every five minutes, for upwards of twenty-four hours, and then continued until the third day at intervals of fifteen minutes. This patient was calculated to have taken three ounces (one thousand four hundred and forty grains) of calomel. Prolapsus ani and tenesmus occurred as reaction commenced; and for the first two days the stools were in the condition of black wash. In this, as in all other cases where the calomel is thus given in the collapse, no absorption occurs, and no evil ensues from it however great may be the number of small doses taken.*

purging ceased, the pulse returned, the livid colour disappeared, a general warmth and universal perspiration was produced, the voice grew stronger, and the improvement was so decided, that I ordered one pill only to be taken every hour: after twelve hours this was discontinued, the patient having no material ailment except debility. It was necessary to give him an aperient. He was discharged in four days well. In this case, then, two hundred and nineteen grains of calomel were taken, without any appearance of ptyalism being produced, or any unpleasant symptom. The other two cases were treated exactly similar, and with the same results.

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No. 24.

*Abstract of Documents communicated by the Central Board of Health,  
Cholera Hospital, Nutford-Place.*

“The disease here, under the care of Dr. Arthur T. Holroyd, of Harley-place, has almost universally yielded to the treatment recommended by Dr. Ayre, of Hull. The house-surgeon, Mr. Toynbec, has been indefatigable in his attention to the patients, and I attribute,” observes Dr. H., “my success in a great measure to his unwearied exertions. He suffered from a severe attack about two months ago, but fortunately recovered under the use of calomel and opium. One of the nurses and a porter, who were also attacked, were restored to health by the same remedies.”—*October 1.*

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No. 25.

*Return of Patients admitted into St. Pancras Hospital.*

“In seven cases the saline treatment was employed not only without mitigation of any one symptom, but with injurious effects. In not one case did the saline treatment produce recovery; calomel and opium, however, afterwards restoring the patient in some instances.”—“One man (John Holliday) was most severely attacked on the 2nd September. He was treated with calomel and opium (muriate of morphia), of the former of which he took three hundred grains, and of the latter thirty grains, without their producing either ptyalism or any head affection. He recovered on the 14th of September.”

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No. 26.

*Letter from W. B. Hay, Esq.*

King-street, Hull, December 17th, 1854.

DEAR SIR,—In answer to your enquiry as to my success, or otherwise, in the treatment of Asiatic cholera, during the epidemic of 1849, I can state that the calomel treatment on your plan I have found most successful, and have a record of many cases of deep

collapse, where there was perfect recovery. That there may be no misinterpretation of my definition of collapse, I do positively state, that all were nearly pulseless, some fully so for some hours, with suppression of urine, &c. One case was in collapse twenty-four hours.

I may say further that only a few of my patients were ptyalized, and those few would not have been so, but for the anxiety of patients or their friends to continue the pills too often when a change for the better took place.

As to consecutive fever, I hardly ever knew of a case under the calomel treatment. As a general rule, the collapse had become developed before I saw my patients, for if seen early they rarely went forward into that stage. In the last two cases which I had of the choleraic diarrhoea, I gave, at your suggestion, the calomel in lime water instead of alone, and with the result of preventing the progress of the disease.

Stimulants were not given by me, with the exception of a few drops of æther and camphor water. One drop of laudanum was given with each dose of calomel, up to twenty-four or thirty drops (taken in the whole), when it was discontinued. I had an opportunity of seeing your treatment carried out to the letter, in 1832-3, being at the time attended to a gentleman (Mr. Sharpe) who fully relied on it.

I am, dear Sir, yours respectfully,

W. BANKS HAY.

To Dr. Ayre.

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*The following account of the treatment of two cases of cholera, in its stage of collapse, was drawn up at my request, by the writer of the foregoing letter.*

In compliance with your desire to have in writing the details of my treatment of the two cases of Asiatic cholera, which occurred in 1854, and which you visited with me, I beg to remind you that they were the first cases that appeared in this town, at the partial outbreak of the disease in that year. The first case was in a sailor (Pashby), aged sixty-three, residing in an entry in Vicar-lane. He had had diarrhoea the previous two days, and at two A.M. of September 3rd, he became affected with cramps in his legs, with copious purging and vomiting of the colourless fluids. At five I was called up to him. He had already discharged more than two potsful of fluid from his stomach and bowels, and his hands had become cold and sodden, the eyes sunken, the skin dusky, the voice husky, the tongue somewhat cold, with the other characteristic symptoms of collapse. Ordered two grains of calomel to be given every ten minutes, and nothing else excepting cold water to be given to him. From the time he began this treatment he passed



only half a potful from his bowels; at three p.m. he had the last rice-coloured discharge from the bowels, and the cramps had ceased. The stage of collapse passed away at the end of ten hours, but the secretion of the kidneys was not restored until after thirty hours of suppression. This patient took seventy grains of calomel, and on the third day from the date of his attack he walked out, and called upon me. My second case was in a female (Grout), aged fifty-six, also a private patient, residing in King-street. Her previous health had been indifferent, and she had had diarrhoea two days before Thursday, the 7th of September, when at midnight she became affected with cramps and purging, and at ten in the morning I was called to her, and found her labouring under all the symptoms of collapse. Two grains of calomel were given every ten minutes, and nothing else but water as her drink. The pills were taken twenty-two hours, to the number of one hundred and forty grains, when the collapse became fully removed, though the secretion of the kidneys was not restored until the end of thirty-six hours. In a few days afterwards she was restored to her usual health. In these two cases, as in all others in which I have given calomel, the first discharges from the bowels, when changed from the colourless kind, were black.

W. B. HAY.

King-Street.

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No. 27.

George-street, March 7, 1859.

DEAR SIR,—Having been favoured with the perusal of your letter to the French academy, I cannot forbear repeating my assurance, how entirely I agree in all you say on the value of the calomel treatment, and of the facility of its employment, and the rapidity of the relief afforded by it. My confidence in its power is like your own, quite unchanged, and no state of severity has ever led me to despair of its success. I remember on one occasion, a medical gentleman, I believe of Louth, accompanied me to see a patient to whom I had just been called. The patient was in profound collapse; being livid, and pulseless, with a scarcely audible voice. My companion pronounced him to be dying, when I answered, call upon him to-morrow. On the morrow, as I foresaw, convalescence had taken place, and in a few days the sick man was recovered. I saw a great number of these cases both alone and with you, and more than eighty per cent of recoveries would have taken place had the attendants of the patients rightly performed their duty.

I am, dear Sir, yours truly,

RICHD. SHARPE.

To Dr. Ayre.

No. 28.

*From Dr. Wraith to Dr. Ayre.*

Darewen, near Blackburn, Oct., 1854.

DEAR SIR,—When the cholera was prevalent in 1849, I tried the plan of Dr. Hawthorn, but though it succeeded at the onset of the disease, when a diarrhœa, I could not trust to it in the state of collapse. In eight or nine cases of collapse I followed your plan, and seven recovered. This season, 1854, I have had only three cases, and all have recovered. The first, a man had been working in the hay-field, and had taken three glasses of ale; at night he eat his supper, and retired to bed as well as usual. At five A.M. I was called in. He had been ill two hours, and I must say, he certainly surprised me. He was pulseless, with a cold clammy sweat, skin of a livid hue, sunken eyes, constant vomiting and purging, with rice-water dejections. He took two grains of calomel every ten minutes, for four hours, with one drop of laudanum for two hours, when all vomiting and purging ceased. He had very little fever after, and was walking out in six days. The other cases are just now convalescent. Ann Ansdale, aged twenty-nine, and her daughter, aged five,—They had removed from here with the husband to Wigan. He was taken ill at Wigan, of cholera, and died at night. The widow and child were taken ill on the Sunday following, about three A.M. I visited them at eight A.M., when I gave the woman one grain every five minutes, and the daughter one grain every ten minutes—the former for three hours and a half, and the latter for five hours. The woman has often told me that they were attacked in the same way as her husband—he was not so bad as her daughter; and when a little better, she lamented very much the state of her daughter. “She just lays as John did, and is as cold as he was,” &c., &c. My success in these cases would not permit me to have confidence in any other plan.

I am, dear Sir, yours truly,

S. H. WRAITH, M.D.

To Dr. Ayre, Hull.

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*The following Declaration by Medical Gentlemen, residing at Blackburn and its neighbourhood, was forwarded to me through J. Morley, Esq., of that town.*

“We, the undersigned, have no confidence in any plan of treatment that we have tried than that by small and frequently repeated doses of calomel, and by this plan we have succeeded in curing the worst forms of cholera.”

Signed by Drs. MAITLAND, IRVING, MANSFIELD, and S. H. and J. H. WRAITH.

## No. 29.

*Extract of a Letter from Mr. Gathergood, of Terrington St.  
John's, Norfolk, addressed to Dr. Ayre.*

You will see, from looking at the following account, that sixty-three patients came under my treatment, and that of these, twenty-four were in diarrhœa, premonitory of cholera, twenty-one in incipient cholera, premonitory of collapse, and eighteen in true collapse. Of the entire number there were eight deaths, and fifty-five recoveries. By the patients in true collapse there were taken by

9...	2 grains every ten minutes for 7 hours...	84 grains taken by each
5	„ „ 8. „ ...96	„
2	„ „ 4 „ ...48	„
1	„ „ 10 „ ...120	„
1	„ „ 9 „ ...108	„

One of the patients in whom death took place was a man sixty-six years of age, who had been drunk eight days previous to his attack, and during the whole of that time had not partaken of a penny-worth of food. One of the others was a man, thirty-eight years of age, and of dissipated habits, and who previous to attending him had been supplied with medicines containing a large quantity of opium. Both these patients went into consecutive fever, of which they died. Not more than ten grains of opium were given to the entire number of sixty-three patients.

## No. 30.

*Extract of a Letter from F. Manby, Esq., of East Rudham, Norfolk.*

In 1832 our village was visited by cholera, and 109 cases of the disease came under treatment. They were all more or less virulent, and many of them answering to the truest defined Asiatic character. Our treatment, I may say, was uniform. Calomel was our sheet-anchor, given in small doses every ten minutes. Of these 109 patients, 13 died. In 1849 we were visited again by the disease, and our treatment was the same, and the result about the same. We have now, I thank God, much more assurance of our remedy, and less dread therefore, of its attack than we had at first; that is to say, we have attained an established rule or system to treat it on, as we have for other diseases, and almost, as a matter of course, treat a case with a measure of indifference.

## No. 31.

13, Leigh-street, Burton Crescent, London, Sept. 16, 1854.

DEAR SIR,—I have to thank you for teaching me, in the year 1833, the treatment by calomel, which I have followed every period

since, with great success. My object in writing to you now is to ask, as one following your treatment, what plan you pursue for the consecutive fever. Should you want cases for any future publication, I can give you plenty. I have given calomel to the extent of seven hundred and thirty-four grains, without salivation.

(Signed)

J. W. TAYLOR.

To Dr. Ayre.

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No. 32.

Sheffield, Nov. 24th, 1834.

*To Dr. Ayre, from Dr. Thomas.*

DEAR SIR,—My individual experience in the treatment of cholera has not been extensive, having in private practice treated about twenty-two well-marked cases. The first that occurred in my practice was a respectable young woman (Kent) living on the banks of the river Don, in a large yard where the disease had been very fatal. The existing symptoms were rice-water dejections, cramps, vox cholericæ, complete prostration of strength, pulse at the wrist just perceptible. At ten P.M. she took one grain of calomel, with two minims of laudanum in camphor water, every five minutes until nine A.M., when the character of the evacuations was satisfactorily changed to a dark green colour, and the most part mucous. The vomiting had ceased, and she was in all respects much improved. I ordered the calomel to be given only every half-hour. On the following morning a complete relapse resulted; the evacuations were like rice-water, and the stomach irritable. On the resumption of the calomel every five minutes throughout the day, I was gratified in the evening to find a great amendment in the symptoms, the dark green stools being again produced. The same dose was continued, without the laudanum for twelve hours longer, and then the intervals were gradually lengthened. Henceforth we had no relapse. The patient went through three weeks of typhoid fever, and eventually was restored to perfect health. At the end of five days her mouth became sore, though ptyalism was never profuse.

My next case was a woman, aged fifty-two, whom I bled immediately. Symptoms very like the former, with more severe cramps. She took one grain of calomel, with laudanum, every five minutes, for forty-eight hours; green stools appearing after eighteen hours use of the calomel. She improved rapidly for a week, when a relapse from cold occurred, and yielded to the small doses of calomel. Eventually she was cured, and not any sore mouth. In many other cases, particularly in young persons, I have been gratified by the influence of these small doses of calomel, though in most of these I have premised bleeding, either general or local. The opinions of two other practitioners, who have seen much of this disease, I know are very favourable to the plan adopted by you; but you well know how difficult it is to induce men, extensively



engaged in practice, to commit their views to paper. I must now, sir, conclude by thanking you sincerely for the valuable aid which I conceive we have received from your mode of administering calomel in this disease.

I am, dear Sir, yours truly,

H. THOMAS.

To Dr. Ayre.

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No. 33.

*Extract of a Letter from J. Taylor, Esq., to Dr. Ayre, Sept. 8.*

Having witnessed the two epidemics of 1832 and 1849, and on rather an extensive scale, I consider myself in a position to give you my unqualified opinion in favour of calomel, according to the method proposed by you. . . . I have great pleasure in saying that the success of my practice was such as to occasion some astonishment in the neighbourhood (Darlington). So great, indeed, was the success, that I only returned ten fatal cases, and of these, two were in *articulo mortis* when first seen.

6, Surrey-place, Old Kent-road, London.

Sept. 8th, 1853.

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No. 34.

"*Lancet*," Nov. 11th, 1848.

*Extract from a Letter by C. Searle, M.D., late of the E. I. C.*

*Madras Establishment.*

"If any single remedy merits the name of specific in the cure of disease, calomel is the remedy in cholera, judiciously employed—that is, early employed, and in doses commensurate with the urgency of the symptoms—a fact which is well attested by the experience of Dr. Ayre, of Hull, as recorded in the "*Lancet*," of Saturday last, in which, of two hundred and nineteen cases, one hundred and seventy-six recovered by the use of calomel. It will be asked, how is it then, that this remedy, which has been employed from the earliest period of the epidemic in India, has not acquired that confidence which I would repose in it? For this good and sufficient reason, that where given, it has been the constant practice to *annul its influence* by the conjoint administration of a large dose of *opium*."

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No. 35.

## COMMUNICATIONS ON THE TREATMENT OF CHOLERA

By P. NIDDRIE, M.D.

It is melancholy that cholera continues to be treated by means which much experience has shown to be perfectly useless, and that even high authorities continue to recommend means that have not

the least influence on the disease. I have notes of ninety-three cases that occurred, in the year 1832, in the cholera hospital ship, *Dover*, thirty-three of which terminated fatally; and from these and many subsequent cases I have fully ascertained that brandy in any quantity, up to a bottle in twelve hours, does not at all stimulate, that ammonia is equally powerless, and that opium, chalk, heat, friction, and bleeding, are perfectly useless. So little effect had these and other remedies, that I feel assured they did not in the least retard the fatal termination of any of these thirty-three fatal cases, and in one case the fatal termination was certainly accelerated by the abstraction of a few ounces of blood. Calomel and soda-water, given every three or four hours, were equally useless. Melancholy experience of the uselessness of such means has led some to believe that treatment is of no avail in cholera, and that most cases would do quite as well if left entirely to themselves. This is doubtless the case in severe cases of collapse, if medicines be administered every three or four hours; but what results from the treatment so zealously urged by Dr. Ayre? In a former number of "*The Lancet*," I gave details of one of the numerous cases that have convinced me that cholera, even in the stage of collapse, is quite as manageable as any other severe disease. The mode I have followed differs little from what I find Dr. Ayre so zealously recommends, and consists in placing on the tongue two grains of calomel, mixed with a little sugar, to be washed down by an effervescing draught; if rejected, the dose is repeated immediately; if not followed by vomiting, the dose is repeated in from five to ten minutes till reaction commences, when the period between each dose is gradually extended to an hour or longer. Calomel and carbonic acid gas seem to be as powerless as other means, unless thrown constantly into the stomach; therefore this mode of giving them must be followed, and the course of the disease being so very rapid, the patient must not be left until collapse yields to the constant attacks of these remedies. I have had ample experience of the total uselessness, in cholera, of large doses of medicine given at long intervals, and am fully convinced of the great value of calomel and carbonic acid gas, constantly and perseveringly administered at short intervals. Under this treatment purging ceases, or becomes less frequent, although vomiting may occasionally recur for some time; the expression of the countenance gradually changes; the temperature of the breath and tongue rises; the pulse gets stronger and the skin warmer; cramps become slight, and extreme collapse is followed by little or no febrile excitement; and the gums do not even swell, if care be taken gradually to discontinue the calomel by extending the period between each dose as collapse disappears. I would earnestly urge this treatment on those who have found the usual remedies fail, and am assured that if this mode of administering calomel be strictly followed, the result will be found to be as happily successful as the usual large doses of medicines at long intervals are found to be despondingly powerless.

No. 36.

*A Report from Dr. Oke, of Southampton, to the Committee of the College of Physicians.*

The cholera broke out with great violence in Charlotte-place, an assemblage of houses on a high situation to the N.E. of the town and detached from it. The population of this place was estimated at six hundred, of whom forty died of the epidemic. Two gentlemen volunteered their gratuitous services to the pauper patients. They decided on adopting a modification of Dr. Ayre's plan, giving two grains of calomel every ten minutes to adults, with somewhat less to children, without any opium, except when it was demanded by severe cramps. In order to ensure its regular administration, nurses were employed to give the doses when the medical attendants could not remain. The result was most satisfactory, the vomiting and purging were soon controlled, and by persisting in the treatment the alvine discharges became of a dark green colour, which was considered as prognosticating a favourable result. Under this treatment, children, in whatever stage, generally recovered.

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No. 37.

*Extract of a Letter to the "Lancet," from J. H. Nankivel, vol. 2, 1849.*

When cholera first appeared in this county (Cornwall) I had an opportunity of seeing almost every case in the practice of Mr. Cornish, of Falmouth, and he very soon found that calomel, in small and frequently-repeated doses, was the only medicine which appeared to have any influence in controlling and arresting the disease; indeed, so manifest were the advantages derived from the persistent administration of this drug, that he directed the attendants to remain with the patients as much as possible, and to give every quarter of an hour two or three grains of calomel; and thus relieving guard night and day, they frequently had the high satisfaction of witnessing a rapid recovery of the patients.

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No. 38.

*Extract of a Letter to Dr. Ayre, from Dr. Sutherland, Inspector-in-Chief to the General Board of Health, dated Oct. 8, 1849.*

"I have always heard your treatment placed amongst the very first and most successful, and I have deemed it my duty to say so when asked my opinion. I recommended it to the medical men of Sheffield last week. It is founded on sound principles, and if carefully used, will save lives that might otherwise be lost."

No. 40.

*A Report of two cases of cholera, successfully treated by calomel, by  
Fred. W. Marshall, Esq., M.B., Howick.*

A. P——, aged twenty eight, a labourer, who has lately suffered considerable privation, was attacked about noon of July 11, with vomiting, purging, and cramps. He was at the time in the hay-field, and had drunk a considerable quantity of beer. He had two miles to walk before reaching home, which he accomplished with difficulty. I saw him at five p.m., and immediately bled him to ten ozs. Three grains of calomel, with a minim and a half of laudanum, were directed to be given every quarter of an hour, until the symptoms should be relieved. He rapidly improved under this treatment, having taken twelve doses of the medicine.

James S——, aged fifty five, a worker in a coal-pit by trade, but lately had been hay making, and drinking a large quantity of beer, the same as that drank by the former patient. Was attacked when hay making with vomiting, purging, and cramps. These continued during the night, his wife expecting every moment would be his last. I was not called in until five the next morning. No bleeding was practiced in this case, as the pulse was too far reduced; but three grains of calomel and one and a half minim of laudanum, were directed to be given every quarter of an hour, until the symptoms were removed. He took only seven doses before the symptoms had abated, and he was walking about in three or four days again.—*Lancet*, Oct. 2, 1849.

No. 41.

*Extract from a Letter, published in the "Lancet," for September,  
1849, from M. K. O'Shea, Esq.*

After a case, in which an injection into the veins was unsuccessfully employed, I was influenced by Dr. Crisp, to give Dr. Ayre's plan of treatment a fair trial, unprecedented by any other treatment, and the result was, I did not lose a single patient, out of many who had come under my care. Dr. Hughes' letter induces me to beat up a few pages of my day book for the present month, and I extract therefrom the names of twenty four persons subjected to the calomel treatment, and all have recovered, or are convalescent. It would take up too much of your time and space to give a detailed account of each of those cases. Some of them commenced with cramps, and there was great prostration in all of them. Give the calomel in the form of pills, not of powders. Do this early, and then I think you will have a considerable majority whose fate you need not assume is almost certainly sealed. I conclude with a recommendation of a correct, careful, and early application of Dr. Ayre's two grain doses.

(Signed)

M. K. O'SHEA.



*Letter to Dr. Ayre, from the same.*

17, Mount-street, Lambeth, 9th June, 1854.

MY DEAR DOCTOR,—I have still every reason for continued confidence in the steady administration of small and frequent doses of calomel. I have in my neighbourhood a medical man, who, though unwilling to afford you the merit your suggestion so well deserved, has nevertheless adopted your principle in his practice. Some of my patients who, previous to being attacked with cholera, suffered very much from ill health, but having undergone the treatment proposed by you, and recovered, seem ever since to be quite renovated in constitution; and one old lady, over eighty years of age, whose death was anticipated before the summer of 1849, has enjoyed ever since a renewed state of health.

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No. 42.

*On Dr. Ayre's treatment of Asiatic Cholera, by W. Norris, Esq., M.D., in a Letter to the "Lancet," Aug. 25th, 1849.*

I have been so much pleased with Dr. Ayre's treatment of cholera, and with your remarks, that I trust and hope that Dr. Ayre's plan of treatment will enable us to diminish the fatal effects of that dire disease, and I think he merits our warmest praise. The bold, but judicious plan of giving small and frequently repeated doses of mercury, with opium, in my humble judgment, is far preferable to giving ample doses of calomel. It may be presumed, from the frequent vomitings, that probably not half the remedy remains on the stomach, and smaller doses are more likely to remain than larger ones, and that circumstance may diminish our fears as to its salivating effects. In this awful disease, cholera, time is of the greatest consequence, and the quick repetition of doses of the remedy is the essential part of the discovery. I believe mercury to be our sheet anchor.

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No. 43.

# TREATMENT OF CHOLERA BY SMALL AND REPEATED DOSES OF CALOMEL.

By W. J. COX, Esq.

*To the Editor of "The LANCET."*

SIR,—I send you subjoined, as promised, brief reports of Asiatic cholera, treated mostly by the remedies advocated in my communication, published in your impression of the 11th inst. I have only further to remark, that since that date I have had numerous cases, the result of which has contributed to strengthen and confirm my opinion then expressed with regard to the calomel treatment. It

will be seen that in several instances the calomel was exhibited in powder, and this mode of administration I decidedly prefer, whenever the symptoms (especially cramps) are very urgent, as the pills do not directly come in contact with the coat of the stomach. I would once more beg to reiterate an earnest caution against the use of opium *in all cases* of malignant cholera, (whether or no cramps are the most prominent symptom,) as it will ever be found to be the rottenest of reeds.

CASE I.—G. J——, aged thirty nine. Rice-water evacuations; cold extremities. Calomel (two grain pills) every ten minutes. Reaction in ten hours. Rapid recovery.

CASE II.—J. D——, aged ten. Pulseless and cold; occasional cramp. Calomel (one grain pills) every five minutes; acidulated rice water. Reaction in fourteen hours; no consecutive fever.

CASE III.—G. J——, aged forty one. Pulseless, cold, and blue. Calomel (two grain pills) every five minutes; turpentine and brandy every quarter of an hour. Never rallied.

CASE IV.—J. B——, aged thirty eight. Severe cramp, with feeble pulse, and rice-water purging. Calomel (two-grain pills) every five minutes; acidulated rice water; sponging with aqua regia. Recovery in three days.

CASE V.—T. W——, aged fifty six. Purging and vomiting; cold and blue extremities. Calomel (two grain pills) every ten minutes; cold drinks and sponging. Reaction in sixteen hours, and gradual recovery.

CASE VI.—S. W——, aged twenty one. Pulseless, cold, and blue. Calomel (two grain pills) every five minutes. Reaction in twenty hours, and gradual recovery until the third day, when she miscarried, and died in six hours.

CASE VII.—J. W——, aged twenty four. Pulseless and cold. No treatment for six hours. Calomel (two grain pills) every five minutes; brandy and turpentine. Reaction in sixteen hours. Died on the fourth day, of secondary fever.

CASE VIII.—W. H——, aged forty one. Vomiting and cramp. Calomel (two grain pills) every quarter of an hour; acidulated rice water, and sponging. Rapid recovery.

CASE IX.—S. C——, aged forty two. Well marked collapse, but no cramps. Calomel (two grain pills) every ten minutes; acid drinks. Reaction in twelve hours and slow recovery.

CASE X.—E. R——, aged forty two; of *intemperate* habits. Extreme collapse. Calomel (two grain pills) every five minutes; sponging, &c. Died in ten hours. Treatment *greatly neglected* by friends.

CASE XI.—M. J——, aged twenty nine. Violent cramp and

rapid collapse. Calomel (two grain pills) every ten minutes; sponging, and acidulated rice water. Reaction in six hours, and gradual recovery.

CASE XII.—J. D——, aged forty six. Rice-water evacuations, but no eramps. Calomel (two grain pills) every half hour. Collapse supervening. Calomel every ten minutes, and sponging. Reaction in nine hours.

CASE XIII.—J. C——, aged thirteen. Extreme collapse. *No treatment for eight hours.* Calomel every five minutes. Never rallied.

CASE XIV.—T. W——, aged four. Intense collapse. Calomel (one grain pills) every five minutes. Reaction in fourteen hours; rapid recovery.

CASE XV.—M. D——, aged twelve. Intense collapse. Calomel (one grain pills) every five minutes; acidulated rice water and sponging. Rapid reaction.

CASE XVI.—C. D——, aged forty one. Frightful eramp; collapse supervening. Calomel (five grains in powder) every quarter of an hour; ice to the epigastrium; effervescent, with sulphuric and prussic acids. Complete recovery.

CASE XVII.—J. W——, aged fifty four. Little collapse, but great vomiting and cramp. Calomel (four grains in powder) every quarter of an hour; acidulated rice water. Rapid relief, and gradual recovery.

CASE XVIII.—T. B——, aged thirty six. Excessive vomiting and eramp. Calomel (three grains in powder) every ten minutes; effervescent and sponging. Rapid recovery.

CASE XIX.—C. C——, aged thirty one. Great and obstinate vomiting, but no eramps. Calomel (two grain pills) every quarter of an hour. Gradual recovery.

CASE XX.—E. D——, aged thirty five. Intense collapse; *neglected for ten hours.* Calomel (two grain pills) every five minutes; acidulated drinks. Never rallied, but died in sixteen hours.

CASE XXI.—M. C——, aged sixty four. Cramp and vomiting. Calomel (four grains in powder) every half hour. Quick relief, and gradual recovery.

CASE XXII.—W. M——, aged forty one. Terrific eramp, coldness and failure of the pulse. Calomel (five grains in powder) every ten minutes; sponging with aqua regia. Relief in two hours, and complete recovery.

CASE XXIII.—T. W——, aged fifty two. Very severe eramps, coldness and vomiting. Calomel (three grains in powder) every ten minutes; acid sponging. Relief in three hours, and perfect recovery.

CASE XXIV.—J. S—, aged thirty one. Collapse, but no cramps; nearly pulseless. Calomel (three grains in powder) every quarter of an hour; acidulated rice water, &c. Reaction in three hours.

*Result.*—Recoveries, eighteen; deaths, six. These cases are not selected, but given in order, as they have occurred to me in practice.

I remain, Sir, yours obliged,

W. J. COX, M.R.C.S., &c.

Millwall, Poplar, August, 1849.

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No. 44.

*From W. Hardeastle, Esq.*

Newcastle, Feb., 1832.

Calomel has been our sheet-anchor; when administered according to your plan, every ten or fifteen minutes, it has been eminently successful.

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No. 45.

*Extract from a Letter to the "Lancet," by Mr. Mundy, Medical Officer of the West London Union, on the successful treatment of Cholera by Calomel, in small and repeated doses. (Aug., 1849.)*

At a time when malignant disease is so prevalent, and medical opinions so conflicting, I feel it a duty, holding a public appointment, and having opportunities of seeing more of the disease than practitioners in general, to record the result of my experience, which is decidedly in favour of the practice advocated by Dr. Ayre. I have used a modification of it with much success. I give no opium with the calomel, which I direct to be placed dry on the tongue, in five-grain doses, every quarter of an hour. When reaction commences I diminish the doses of calomel, and also the frequency of administration. I find but little consecutive fever, the patients frequently recovering upon good diet, with alkalies. I do not give brandy as a remedy in any stage of the disease.

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No. 46.

*From P. Glenton, Esq., Superintendent of the Cholera Hospital at Newcastle.*

May, 1832.

Calomel has been given to a considerable extent in the doses you mention, and as regards my own opinion, it is a medicine deserving the highest praise.



*Cholera at Tooting, Surry, in 1849.*

The first outbreak of cholera in England, was at Tooting in Surry, where upwards of fourteen hundred pauper children were maintained in an establishment provided for that purpose. About one hundred and sixty of these children were attacked with this disease, of whom eighty-five were cut off. In a report sent to the "*Lancet*" of that year, by their medical attendant, the treatment was represented to be a modification of mine. This modification however, if such it could be termed, consisted in giving half-a-grain of calomel every half-hour, united with a sixth or a fourth of a grain of opium, to boys of the age of twelve years, washed down with a little brandy and water. Besides this error in regard to the report made of the treatment, there was the further material one of supposing that I gave the calomel in so small a dose that it might be absorbed into the system, and thus act mercurially upon the disease. The gentleman who employed this treatment in a subsequent communication, candidly avowed that both in practice and opinion he had mistaken me, and to quote his own words, "calomel is certainly the remedy on which I place the greatest reliance; and had it not been for the paucity of nurses in the establishment at Tooting, which precluded the possibility, I should have carried out Dr. Ayre's plan of treatment more fully, when the result, I have no doubt, would have been more satisfactory."

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Upon the foregoing report I may observe, that the half-grain of calomel given only every half-hour may have relieved the diarrhœa, where the stage of collapse was impending, for in this way I give it in the diarrhœa, but could be of no service when the disease had become developed. The opinion expressed in the report, that the calomel would be absorbed into the circulation, and was thus to act upon the disease, explains the cause of its being given in so small a dose, and at such wide intervals, and indicates the fear which was entertained, that salivation might ensue from its use. An error unhappily too prevalent at that time, and fatal to that safe and free employment of the medicine which is needed to render it successful.

But to illustrate further the difference in the results between respectively the right and the wrong method of the exhibition, I may cite the details of twelve cases of the disease treated at the Western Dispensary, Lisson-grove, London, reported by Dr. McIntyre, with his permission to publish them. To all the twelve patients the calomel was given with the expressed intention of giving it in accordance with my method, but, whilst in seven of the cases the true method was adhered to, in the other five it was wholly departed from; and the results were such as I should have anticipated. The seven correctly treated recovered, and without consecutive fever, while the five others were lost. So marked,

indeed, is the difference of the treatment, that a glance at the history given will make manifest the presumption, that had all the twelve been treated as were the five patients, all would have died; whilst conversely, had the whole of them been treated as were the seven, all would have recovered. So different would have been the report to be made of the results of a treatment which was nominally in both cases referred to and reported of as adopted from me.

The first: "Two grains of calomel every quarter of an hour; took it to the extent of ninety grains; improved rapidly under the use of the calomel, and recovered without consecutive fever."

The second: "Two grains every quarter of an hour were taken to the extent of one hundred and twenty grains, with early and marked benefit; the patient recovered without consecutive fever."

The Third: Calomel every quarter of an hour, to the extent of ninety grains; was considered convalescent, when, on the third day after his first attack, he had a relapse, equally severe as the first, from eating stewed eels. The same treatment was renewed; the calomel was pushed to one hundred and twenty-grains, when the patient recovered, with a sore mouth, but with no consecutive fever."

The fourth: Calomel, two grains every quarter of an hour; recovered without consecutive fever. No quantity named of the calomel.

The fifth: "Calomel two grains every quarter of an hour; the quantity taken not named; recovered."

The sixth: "Calomel, four grains, followed by two every quarter of an hour, and continued to one hundred and twenty grains; on the eighth day was discharged, quite well."

The seventh: Calomel, two grains every quarter of an hour; no quantity named; recovered; no consecutive fever."

Here follow the five cases in which recovery did not take place:—

To the first: "Calomel every quarter of an hour; was under treatment imperfectly for six hours, and was then removed to the Infirmary."

The second: "One dose of castor oil; calomel, two grains every half-hour; carbonate of soda and camphor julep; sixteen grains of calomel had been taken between three and nine in the evening; at nine the following morning had only taken thirty grains in eighteen hours."

The third: Calomel, two grains every quarter of an hour; carbonate of ammonia, chloride of soda; in nine hours only forty-eight grains were taken."

The fourth: "Calomel every quarter of an hour; ammonia and other stimulants."

The fifth: "Calomel and opium, the dose not named; chloroform internally."

## RÉSUMÉ

OF THE TREATMENT AND RESULTS OF FIVE HUNDRED AND FOUR CASES OF CHOLERA IN THE STAGE OF COLLAPSE, TREATED BY SEVENTEEN OF THE WRITERS OF THE FOREGOING LETTERS, AND REFERRED TO IN THE MEMOIR. THE AVERAGE DOSE OF THE CALOMEL WAS TWO GRAINS, AND THE RECOVERY EIGHTY FIVE PER CENT.

From the following reports we find, that nearly eighty four per cent. of recoveries occurred out of every hundred cases of the disease, and from the notice given of the occurrence of preventable hindrances to the curing of more, it is apparent that on those gentlemen an obligation seemed imposed of explaining, not why they had cured some, but why they had not cured all. The hindrances to greater success were generally of a preventable kind, and plainly attributable to the fault of the patients or their attendants. The remedy restoring twenty patients from a pulseless state of collapse, should under similar circumstances be adequate to the recovery of double that number. In the reports supplied below, by Dr. Shearman, Dr. Gibb, and Mr. Morley, all the conditions necessary to success were fulfilled, and all their patients recovered. The latter gentleman, Mr. Morley, in his letter No. 4, relates, that he had lost under other treatment the whole of his patients, amounting to the number of thirty; but cured every one after he resorted to this treatment. The confidence acquired by such success great as it was, equalled only what I early and openly expressed in regard to it. In hospital practice with this disease, where every needful attention is given to seeking out the cases to be brought into it, and a strict supervision given to the conduct of the nurses, "this disease would become neither a dangerous nor unmanageable disease," and in private life, where early assistance would be sought for, and a steady course of the treatment observed, it might prove "the least destructive of all epidemics."

Date.	Name.	Cases.	Rec.	Dth.	
1833	Mr. Morley, Surgeon, of Blackbourne.	5	5		"Two grains of calomel every ten minutes. In the epidemic of 1832, I had conducted the treatment of thirty-three patients at the Dispensary of this town, and of this number only three were saved, and those were examples of the most malignant form of the disease, and these three were saved by calomel given in small doses. In other cases I had adopted the plans recommended by Drs. Russell and Barry, of the Board of Health, and with the same uniform fatal result. Since then I have had two more cases treated in the same manner, and with the same success."

Date.	Name.	Cases.	Rec.	Dth.	
1854	Mr. G. Allen, District Surgeon, Soho.	28	18	10	"Two grains of calomel every ten minutes. Of the ten patients who died, one aborted and sank

immediately after delivery. One was convalescent, and was destroyed by brandy given by a drunken father. A third was lost by having no other attendant than a drunken nurse. A fourth, when in collapse, was exposed to a cold draught of air. A fifth was chilled by the treatment of a hydropathic. To a sixth the calomel was given in water, and was left sticking to the side of the cup. Thus, therefore, six out of the ten deaths are attributable to accidental circumstances. The whole of the patients were seen in company with my friend, Dr. Macgregor, who has had much experience of the disease, both in this country and in India. Before adopting this practice, I treated two patients with sulphuric acid, and they both died."

Date.	Name.	Cases.	Rec.	Dth.	
1849	Mr. Roberts, Finchley-road,	11	8	3	"Two grains of calomel every ten minutes. I gave the calomel in one case to the extent of two hundred grains; the lady was of the age of sixty-seven. To another, a girl of sixteen, I gave one hundred and eighty grains. Both recovered perfectly, and without any salivation."

Date.	Name.	Cases.	Rec.	Dth.	
1832	Messrs. Wright and Wilson, Sheffield.	103	80	23	"Calomel two grains, generally every ten minutes. Out of the twenty three patients who died, in five the medicine was given with the greatest irregularity. Four had been on our books ill previously; three were confirmed drunkards; and lastly, one was nearly eighty. To one of the recovered patients three hundred grains were given."

Date.	Name.	Cases.	Rec.	Dth.	
1849	Dr. Carter, late of Lewes, now of Brighton	55	53	2	"Calomel two grains every ten minutes. I lost three patients at the beginning of the epidemic, with whom I did not employ calomel, and have only lost two since I employed it; and I doubt much whether any one who has adopted the treatment by small doses, frequently repeated, can adduce more convincing proofs of the wonderful effects of the treatment. Mr. Osborne of Bellevue, near Southampton, informs me that he had been much prejudiced against this treatment until he had tried it, after which every case recovered."

Date.	Name.	Cases.	Rec.	Dth.	
1849	Mr. Jones, Wandsworth-road,	107	100	7	"Calomel, two grains every ten minutes generally; no opium nor stimulants. In the first three cases of the disease I tried salines; they all died; with the next two I tried calomel in small doses, and both recovered. I continued to order calomel in all the succeeding cases, and with the result given. I found calomel to be the sheet anchor."



Date.	Name.	Cases.	Rec.	Dth.
1849	Mr. Spong, Feverham, Kent.	4	4	

"Two grains every ten minutes. The success of the treatment was uniform. One of the cases was so severe that the patient lay for some time pulseless, speechless, and gasping."

Date.	Name.	Cases.	Rec.	Dth.
1849	Mr. Foote.	4	3	1

"Calomel in two grain doses every ten minutes. I employed calomel in four cases, in three of which it was eminently advantageous. In the fourth, an old lady, I have reason to believe that the calomel was not given according to my orders, that is to say, every ten minutes."

Date.	Name.	Cases.	Rec.	Dth.
1849 and 1854	Dr. Shearman, Rotherham.	3	3	

"Calomel two grains every ten minutes. In 1832-3, I saw a great deal of this terrible malady. At that time we were ordered by the central Board of Health, under the direction of Drs. Russell and Barry, to treat the cases with the hot air bath, large doses of calomel and opium, brandy, &c. In 1849, I had but two well marked cases, which I treated on the small dose system; they both recovered. And in this year, 1854, I have had a third case. It was one of great severity.—Took two grains every ten or fifteen minutes, until he had taken eighty grains, when reaction took place; and when the frequency of the dose was reduced, he recovered perfectly."

Date.	Name.	Cases.	Rec.	Dth.
1849	Mr. Eccles, of Plymouth.	39	27	12

"Calomel, ten grains at first, followed by two grains every ten or fifteen minutes. Out of two hundred and fifty cases of cholera or diarrhoea which would, I believe, have been cholera, I had only fourteen deaths, and at least one half of these were neglected cases. On the treatment by small doses of calomel I solely relied."

Date.	Name.	Cases.	Rec.	Dth.
1849	Mr. Merry, Hemel, Hempstead.	52	40	12

"One grain of calomel every ten minutes. During the epidemic of 1832, and the succeeding ones, it has fallen to my lot to have a great many cases of Asiatic cholera, and I have had the opportunity of trying every plan suggested; but I feel satisfied that the only chance of success with the true Asiatic cholera is the calomel treatment. After continuing the treatment for many hours, I have seen in many cases which appeared hopeless, such an improvement as appeared impossible."

Date.	Name.	Cases.	Rec.	Dth.
1849	Western Dispensary, Lisson Grove.	7	7	

"Calomel, two grains every ten or fifteen minutes. First case took calomel to the extent of ninety grains; no fever followed. Second, to the extent of one hundred and twenty grains; no consecutive fever. Third, one hundred and twenty grains; no fever followed. Fourth, one hun-

dred and twenty grains; no fever. Fifth, sixth, seventh, entire quantity taken not named. Five other cases were treated with calomel, either with large doses or small ones, at wide intervals; they all died."

Date.	Name.	Cases.	Rec.	Dth.	
1849	Mr. Cox, Kensal Town.	24	18	6	"I have had numerous cases since making up this return, and which have contributed by their result to strengthen and confirm my opinion, already expressed, of the value of the calomel treatment."

Date.	Name.	Cases.	Rec.	Dth.	
1849	Dr. Paync, Warwick-square.	1	1		"I have only sent the details of my treatment in one case to the <i>Lancet</i> , but I have had very many cases, and have steadily pursued the same treatment by small doses, and have lost but one patient."

Date.	Name.	Cases.	Rec.	Dth.	
1849	Mr. Pickop, of Blackburne,	1	1		"This patient took one hundred and forty grains, and had no ptyalism."

Date.	Name.	Cases.	Rec.	Dth.	
1850	Dr. Gibb, late of Montreal, now of London	10	10		"I have not lost a single patient in this disease. My cases have been few, but their successful issue encourages me to believe that if I had had many more, nearly all might have been saved by the use of calomel on the plan pursued by Dr. Ayre."

Date.	Name.	Cases.	Rec.	Dth.	
1850	Dr. Hall, of Montreal; Lecturer on Medicine in its University.	25	18	7	"Experience from the results of the treatment in these cases has taught me that if the system is not at once paralyzed, the fairest prospect is afforded to us, through the calomel thus given, of restoring a patient from an otherwise imminent death. The calomel treatment has, then, something more than a mere claim on us on the grounds of theory. Its practical employment has proved as signally successful in the hands of other medical gentlemen of this city (Montreal) as it has done in mine."

Date.	Name.	Cases.	Rec.	Dth.	
1850	Dr. Von Effland, of Quebec.	50	45	5	"These cases were communicated by Dr. Effland, through the medical journal of Montreal, in which he observes that the treatment of all his cases was that pursued by Dr. Ayre of Hull, and adds, that he never regarded the quantity of calomel of any moment in such a terrible disease."

CASES.

504

RECOVERIES.

421

DEATHS.

82

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Coatsworth, Printer and Publisher, 51, Savile-street, Hull.











